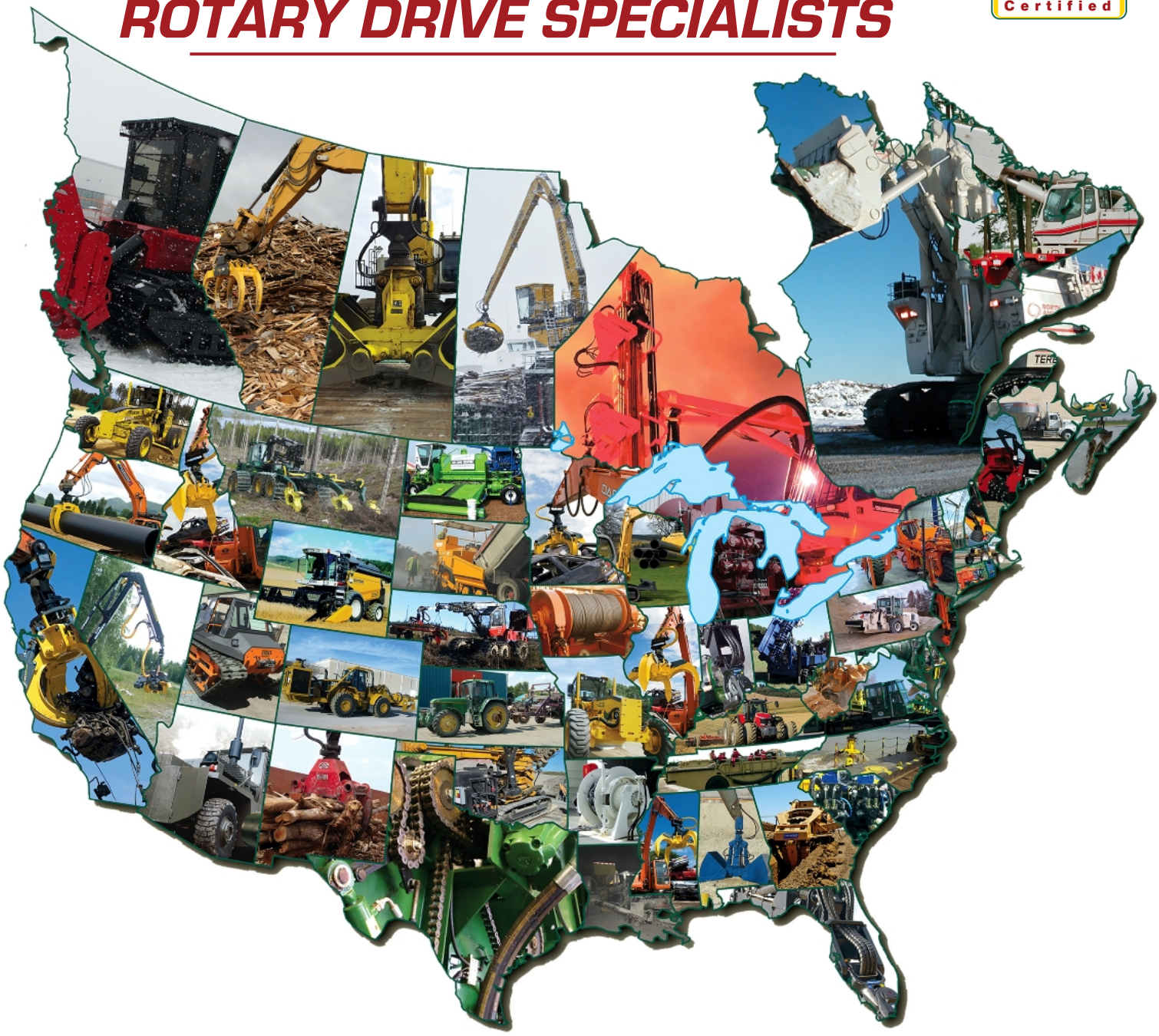
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Solution Providers
- Established in 1975
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Solutions Magazine 2022

Motors • Pumps • Gearboxes • Valves • Controls • Power Units

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NORTH AMERICAN HYDRAULICS

Low Speed High Torque Motors

Solution Providers





North American Hydraulics, (NAHI, LLC), partnering with Black Bruin, LTD; the Power on Demand Specialists, offering Radial Piston Wheel and Shaft Motors designed for Mobile and Industrial Applications.

Features and Benefits:

- Compact Design with a Rotating Housing and Shafts
- Superior Starting Torque for Low-Speed Applications
- Ability to Mechanically Freewheel at Highway Speeds
- Multiple Brake Options



Proven Solutions for the Following Drives:

- Power on Demand
- Assist
- Primary
- Winch
- Conveyor
- Reel
- Feed Roller







B200 Series – On-Demand Wheel Motors

Model	Displacement (in³)	Max Working PSI	Peak PSI	HP	Max Speed RPM
B240	38.4/48.8	4300	5000	47	240/185
B250	61.0/76.3/97.6			67	200/160/125
B260	122.0/152.5/192.2	5800	6500	120	125/140/110
B270	244.1/305.1/384.4			175	125/100/80

BB Series – Wheel Motors

Model	Displacement (in³) Model	Max Working PSI	Peak PSI	HP	Max Speed RPM
BB-3	403-040-2110, 403-040-2140	4300	5000	33.5	250
BB-4	30.5/38.4/48.8			47	300/240/185
BB-5	61.0/76.3/97.6			67	200/160/125
BB-6	122.0/152.6/192.2	5800	6500	120	175/140/110
BB-7	244.1/305.1/384.4			175	125/100/80

BBC Series – Wheel Motors

Model	Displacement (in³) Model	Max Working PSI	Peak PSI	HP	Max Speed RPM
BBC01	C16-100-0010	5800	6525	42.9	180
BBC02	43.0/47.8/52.6/57.3/62.1			56.3	223/201/182/167/154
BBC03	55.4/61.6/67.8/73.9/80.1			67.1	206/186/169/155/143
BBC05	95.9/106.6/117.3/127.9/138.6			96.6	172/155/141/129/119
BBC06	C65-261-1302			122	107
BBC07	C72-1A1-3004			167	110

S Series – Shaft Motors

Model	Displacement (in³)	Max Working PSI	Peak PSI	HP	Max Speed RPM
S-1000	268.5/384.4/457.7	5800	6525	235	180/180/150
S-2000	537.0/610.2/768.9/805.1/915.4			469	130/110/90/86/75
S-3000	805.1/915.4/1153.3/1373.0			670	85/75/60/50



Black Bruin
No power like it.

Please contact NAHI for additional information.

The above information should be used as a guide and is subject to change without notice.

Please contact NAHI for proper selection.

NORTH AMERICAN HYDRAULICS

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BLACK BRUIN HYDRAULIC MOTORS

ON-DEMAND WHEEL DRIVES



HIGH TORQUE
WHERE IT IS NEEDED

- More Tractive Effort
- Easy to Freewheel
- Reduced Ground Damage
- Less Tractor Power Needed With Improved Efficiency
- Low Cost of Maintenance With Fewer Components
- Available With Strong Certified Brakes

B240



B250



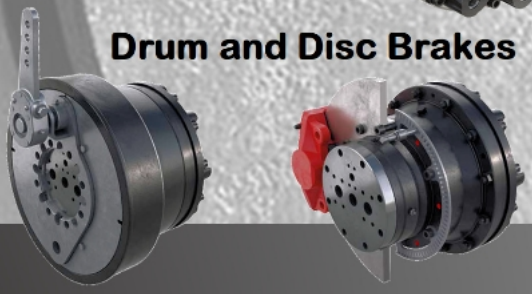
B260



B270



Drum and Disc Brakes



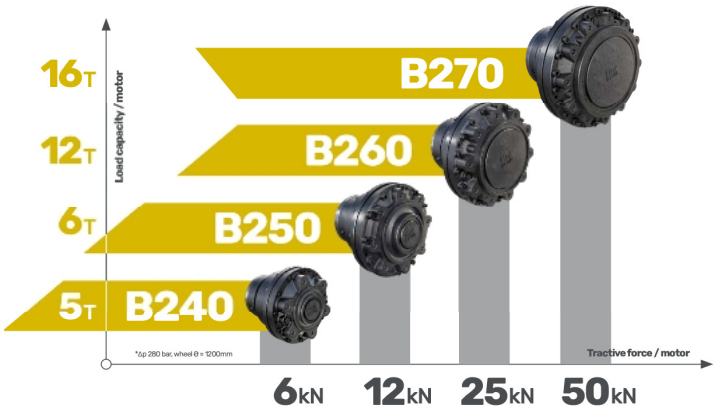
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NORTH AMERICAN HYDRAULICS

Solution Providers
Technical Details - Motors





Motor Model Code – Freewheeling Hub Motors B200 Series Model Code AAAA-BBBB-CCCC / D					
A: Frame	**AAAA**-BBBB-CCCC/D	**B240**	**B250**	**B260**	**B270**
B200 series frames	**B240**	•			
	B250		•		
	B260			•	
	B270				•
B: Displacement	AAAA-**BBBB**-CCCC/D	**B240**	**B250**	**B260**	**B270**
B240 displacements	**0063** : 630 ccm/rev	•			
	0080 : 800 ccm/rev	•			
B250 displacements	**0100** : 1000 ccm/rev		•		
	0125 : 1250 ccm/rev		•		
	0160 : 1600 ccm/rev		•		
B260 displacements	**0200** : 2000 ccm/rev			•	
	0250 : 2500 ccm/rev			•	
	0315 : 3150 ccm/rev			•	
B270 displacements	**0400** : 4000 ccm/rev				•
	0500 : 5000 ccm/rev				•
	0630 : 6300 ccm/rev				•
C: Displacement Control	AAAA-BBBB-**CCCC**/D	**B240**	**B250**	**B260**	**B270**
1-speed	**1N00** : Fixed displacement	•	•	•	•
2-speed valve	**2NOR** : Right side – CW preferred	•	•	•	•
	2NOL : Left side – CCW preferred	•	•	•	•
Freewheeling valve	**FW10** : Type 1 – Open freewheeling position	•	•	•	
	FW20 : Type 2 – Closed freewheeling position	•	•	•	
D: Accessory	AAAA-BBBB-CCCC/**D**	**B240**	**B250**	**B260**	**B270**
No drum brake	**NZ** : Fittings for one-time lubrication	•	•	•	•
	GZ : Fittings for regular lubrication	•	•	•	•
Drum brake	**MRI40-O** : Brake size 320x75	•			
	MRI50-O : Brake size 400x80		•		
	MRI60-R : Brake size 420x220 – Right side			•	
	MRI60-L : Brake size 420x220 – Left size			•	

Technical Details – Motors

Motor Type	B240	B250	B260	B270
Displacement (in³)	38.5 / 48.8	61.0 / 76.3 / 97.6	122.0 / 152.6 / 192.2	244.1 / 305.1 / 384.4
Multi-speed type	1 or 2-speed	1 or 2-speed	1 or 2-speed	1 or 2-speed
Maximum rotating speed (rpm)				
Full displacement	240 / 185	200 / 160 / 125	175 / 140 / 110	125 / 100 / 80
½ displacement	360 / 275	300 / 240 / 185	220 / 180 / 145	160 / 130 / 105
Freewheeling	600	500	400	350
Mechanical freewheeling type				
Motor depressurization	1 or 2-speed motor	1 or 2-speed motor	1 or 2-speed motor	1 or 2-speed motor
Internal pilot valve control	1-speed motor only	1-speed motor only	1-speed motor only	1-speed motor only
Maximum torque (lb-ft)				
Intermittent pressure [1]	1655 / 2083 / 2648	3311 / 4138 / 5296	8814 / 11019 / 13881	17635 / 21990 / 27740
Peak pressure	1932 / 2434 / 3090	3865 / 4824 / 6181	9913 / 12398 / 15614	10970 / 13700 / 17270
Maximum working pressure (psi)				
Intermittent pressure [1]	4350	4350	5800	5800
Peak pressure	5075	5075	6525	6525
Maximum output power (horse power)				
Full displacement	47	67	120	176
½ displacement	28	40	72	108
Weight (pounds)	130	203	330	628
Maximum shaft load (pounds) [2]	8800	11,900	27,560	33,950
Grease ring sealing	Available			

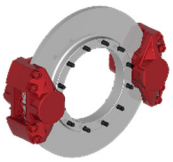
1) Intermittent operation: permissible values for maximum 10% of every minute

2) Load values are for one wheel motor. Values given are applicable for most applications with appropriate wheel offset. Specific calculation has to be done for every application.

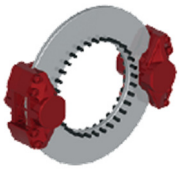
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NORTH AMERICAN HYDRAULICS

Solution Providers
Technical Details – Brakes and Motors



B250
caliper disc brake



B260
caliper disc brake

Technical Details – Caliper Discs

Caliper Disc Brake	B240	B250	B260	B270
Operation	In Development	Pressure Operated	Pressure Operated	Ask
Maximum brake torque (ft lbs)		7670	8110	
Maximum brake pressure (psi)		2175	2175	
Weight (pounds)		72.8	70.5	



B240
drum brake



B250
drum brake



B260
drum brake

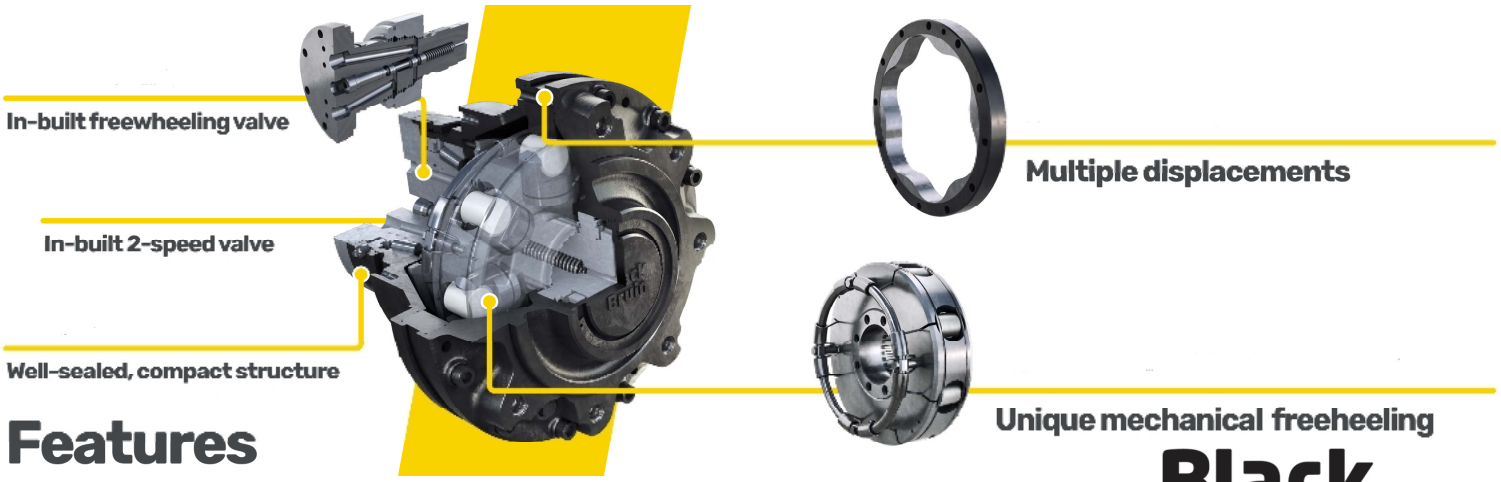
Technical Details – Drum Brakes

Drum Brake	B240	B250	B260	B270
Certification	Pressure Operated	Pressure Operated	Pressure Operated	Ask
Operation	Mechanically operated	Mechanically operated	Mechanically operated	
Maximum brake torque (ft lbs)	6340	9960	14,825	
Maximum actuation torque (lb ft)	1000	1175	2065	
Lever actuation direction	Bidirectional	Bidirectional	CW or CCW	
Weight (pounds)	79.4	136.7	265.6	

Main Dimensions - Motors

Dimension	B240	B250	B260	B270	B240 with drum brake	B250 with drum brake	B260 with drum brake	B250 with disc brake	B260 with disc brake
A (inches)	11.02	12.28	13.23	13.23	11.59	12.91	18.50	12.28	13.23
B (inches)	10.32	10.98	12.48	14.84	10.89	11.61	17.76	10.98	12.48
C (inches)	11.10	13.46	16.38	16.38	13.74	17.48	18.11	13.50	16.38
D (inches) Hub interface [1)]	8.07 6xM18x1.5	10.83 8xM20x1.5	13.19 10xM22x1.5	16.73 12xM22x1.5	8.07 6xM18x1.5	10.83 8xM20x1.5	13.19 10xM22x1.5	10.83 8xM20x1.5	13.19 10xM22x1.5
E (inches)	6.30	8.69	11.06	15.	6.33	8.69	11.06	8.69	11.06
F (inches)	6.50	7.87	9.45	9.45	7.17	8.86	9.25	7.87	9.45
G (inches) Shaft interface	5.51 6xM16x2.0	6.89 8xM16x2.0	7.87 12xM20x1.5	10.23 16xM20x1.5	5.51 6xM16x2.0	6.89 8xM16x2.0	7.87 12xM20x1.5	6.89 8xM16x2.0	7.87 12xM20x1.5
H (inches) Disc interface	-	9.29 12xM12x1.75	10.24 32xM10x1.5	10.24 32xM10x1.5	-	-	-	-	-
I (inches) Lever distance	-	-	-	-	2.85	3.37	6.06	-	-
J (inches) Ø w/brake calipers	-	-	-	-	-	-	-	18.98	19.84

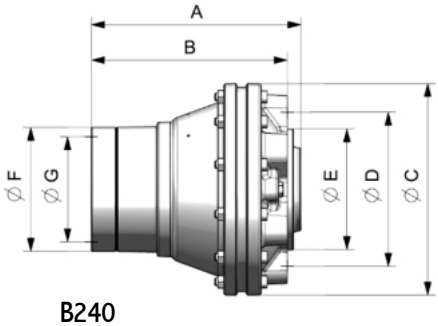
1) Alternative hub interfaces available



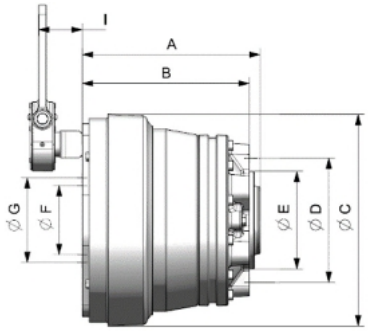
Black Bruin
No power like it.

NORTH AMERICAN HYDRAULICS

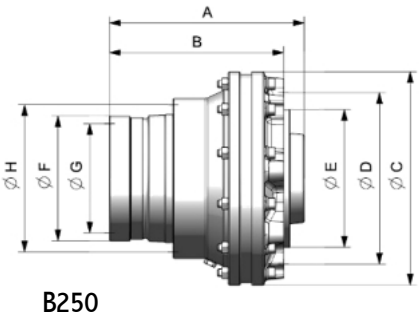
Solution Providers
Technical Details – Dimensions



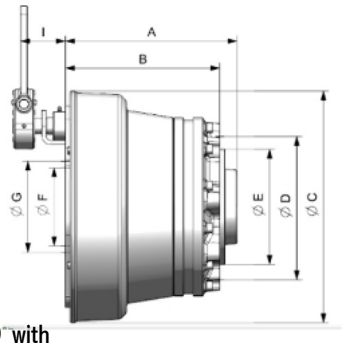
B240
standard motor



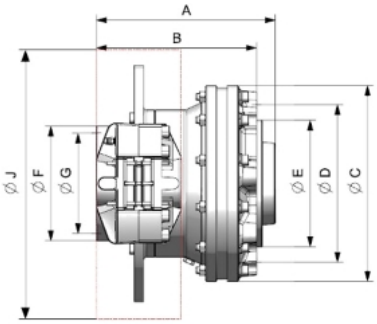
B240 with
drum brake



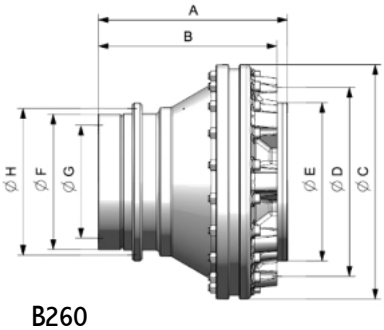
B250
standard motor



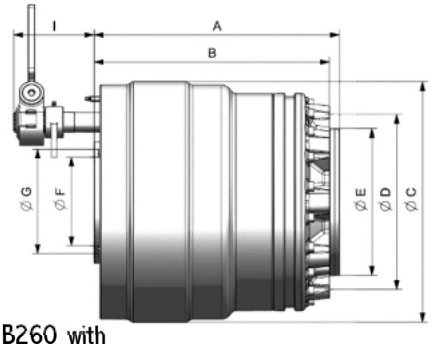
B250 with
drum brake



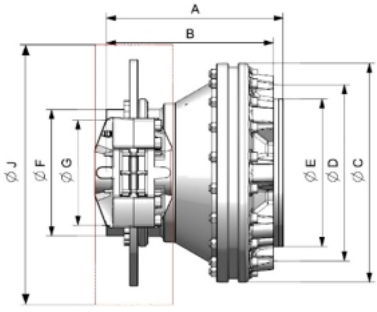
B250 with
caliper disc brake



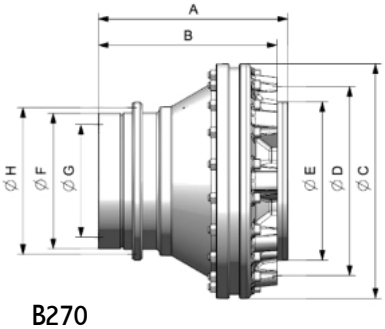
B260
standard motor



B260 with
drum brake



B260 with
caliper disc brake



B270
standard motor

Black Bruin
No power like it.

NORTH AMERICAN HYDRAULICS

On-Demand Drive System
Solution Providers



North American Hydraulics, (NAHI, LLC), partnering with Black Bruin, LTD; offering Power On-Demand Drive Systems designed for Mobile Applications

Features and Benefits:

- Safe and Reliable – Automated functions and self-diagnostics ensure the correct operation of the system. System also includes protection against connection failures.
- Smooth Drive Control – Functions for various operating situations: Driving direction selection, tractive power adjustment, speed range control, freewheeling and assisting traction control (ATC).

Proven Solutions for:

- Earth-moving trailers, hooklift trailers, peat wagons
- Agriculture
- Forestry trailers, wood chippers
- Slurry tankers, trailed sprayers and fertilizers, silage wagons, grain carts, root crop harvesters, balers
- Tractive power in harsh conditions and varying terrain
- Transmission solution for tractor-driven trailers and working equipment



Driving on slippery or soft surfaces







CTR101
Manual drive control

Whether you drive off-road or on-road, the CTR101 control system functions for various operating situations:
Driving direction selection, tractive power adjustment, speed range control, freewheeling and assisting traction control (ATC).
The user controls the systems functions and gains information on its operation via the display which has the same updated and user-friendly interface as on the CTR201. Automated functions and self-diagnostics ensure the correct operation of the system. System also includes protection against connection failures.

CTR201
Smoother drive control

The CTR201 control systems utilizes the tractor's ISOBUS, simplifying the operator's work significantly and offering unbeatable practicality. ISOBUS provides the system with all the data needed to control the trailer's wheel motors, such as the tractor's direction and speed.
The display makes it easy to select the desired drive power, after which the trailer automatically pulls in the same direction and at the same speed as the tractor.
When accelerating, the operator does not have to disengage drive, as the system automatically does so at high speeds. If required, the operator can also disengage the automatic system and control the trailer's drive manually.

HDC Hill descent control function



Driving up steep hills



Reversing on steep hills

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No power like it.

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D210117

Specifications

Control systems / Valves





Control system	CTR101	CTR201
Driving direction selection	Manual	Automatic
Tractive power (pressure level) adjustment	Manual (25/50/75/100 %)	Manual (25/50/75/100 %)
Speed range control (shifting to 1 or 2-speed)	Manual	Automatic
Freewheeling (disengaging the drive)	Automatic	Automatic
Engaging the drive	Manual	Automatic
Assisting traction control (ATC)	•	•
Control for external valve (AUX)	•	•









Valve model	CVM120 / 2WD	CVM120 / 4WD	CVU200 / 2WD
Max. pressure level [bar]	350	350	350
Max. flow rate [l/min]	120	120	200
Operating voltage	12 V DC	12 V DC	12 V DC
Compatible pump	Load-sensing (LS) or fixed displacement	Load-sensing (LS) or fixed displacement	Load-sensing (LS)
Functions	Driving direction selection, tractive power adjustment, speed range control, freewheeling and assisting traction control (ATC).		

Key Benefits of the System:

Less soil damage and compaction
Less tractor power required – Lower fuel consumption
No ploughing effect or hauling of dead weight
Improved steering ability



Crossing obstacles

Black Bruin
No power like it.

NORTH AMERICAN HYDRAULICS



S-series Motors
Solution Providers



60 Years Extensive Experience in The Field of Piston-cam Ring Motors

Built to last
With robust piston design



S Series
Industrial Hydraulic Motors





Get the job done
With high productivity



Reliable drives
For challenging conditions

Features

- High load capacity
- Multi-speed function
- Speed sensor
- Modular design
- Well-sealed structure
- Strong brake



DEMANDING RECYCLING APPLICATIONS

- Robust Piston Design
- No Backlash
- Ideal for Direction Changes and Shock Loads
- Handles Inconsistent Waste Material Effortlessly
- Clears Jamming Situations with Ease

DRILLING INDUSTRY APPLICATIONS

- Rotates Massive Drills with High Performance and Durability
- 2-speed Function On-the-go Drill Speed Changes
- High Productivity in Varying Soil and Ground Conditions
- Available with Several Output Shafts
- Useful Through Hole Output Shafts
- Large Internal Diameter Allows High Flow Capacity Feed Through the Motor
- Strong Tapered Roller Bearings Handle Extreme Axial and Radial Loads

MARINE AND OFFSHORE APPLICATIONS

- Winch Drives with Powerful Brakes
- Motors Run at Constant Torque from Low to High Speeds
- Hydraulically Freewheeling
- Reliable Under Demanding Conditions and Environments
- Triple-sealing Design Protects the Motor from Dirt and Moisture
- Safe and Secure Loads Even in Emergency Situations

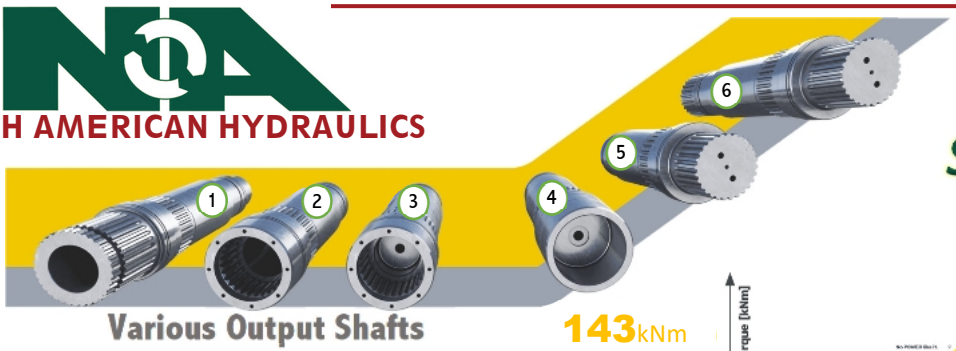
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NORTH AMERICAN HYDRAULICS

S-series Motors
Solution Providers



Various Output Shafts

143kNm

90kNm

40kNm

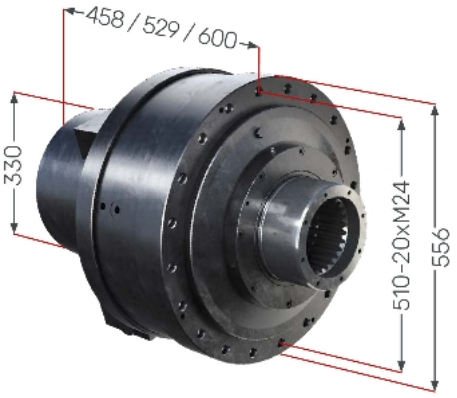


S Series
Industrial Hydraulic Motors



175kW 350kW 500kW

Black Bruin S-series Industrial Hydraulic Motors			
Technical Data	**S1000 S1100**	**S2000 S2100**	**S3000 S3100**
Displacement (ccm)	4400/6300/7500	8800/10000/12600/13200/15000	13200/15000/18900/22500
Max. operating power (kW)	175/175/175	350/350/350/350/350	500/500/500/500
Max. rotating speed (rpm)	180/180/150	130/110/90/86/75	85/75/60/50
Max. working pressure (bar)	450/450/450	450/450/450/450/450	450/450/450/380
Weight (kg) Without Brake	430-448	540-618	642-725
Weight (kg) With Brake	748-766	850-868	957-975
Brake Torque (Nm)	55000	95000	95000
Options			
1-speed	x	x	x
2-speed valve	x	x	x
Freewheeling valve	x	x	x
Cross over relief valve	x	x	x

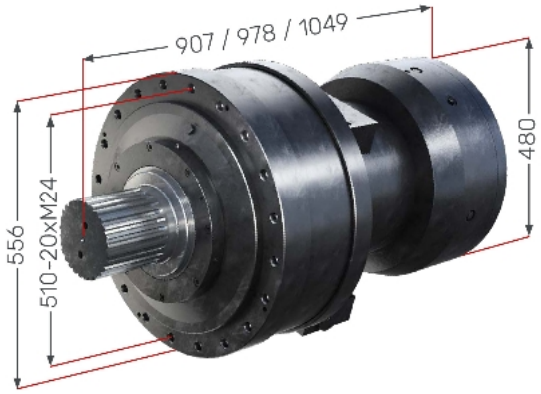


Features

- **High load capacity**
  Optimally placed tampered roller bearings give a high radial and axial load capacity.
- **Multi-speed function**
  Superior productivity with shift-on-the-go 2-speed function.
- **Speed sensor**
  All S Series motors can be equipped with a speed sensor with direction detection.
- **Modular design**
  Flexibility in motor design and service. One frame with various shaft configurations.
- **Well-sealed structure**
  The triple-sealing design protects the motor and ensures reliable operation in all environments.
- **Strong brake**
  T spring-applied, hydraulic release wet multi-disc brake is capable of 95kNm braking torque.
- **Various output shafts**

1	External Splines – Through Shaft	W150/W180
2	Internal Splines – Through Shaft	N150
3	Internal Splines	N140/N150
4	Shrink Disc	Ø140/150
5	External Splines – Solid Shaft	W150/W180
6	External Splines – Solid Shaft, Motors with Brake	W150/W180

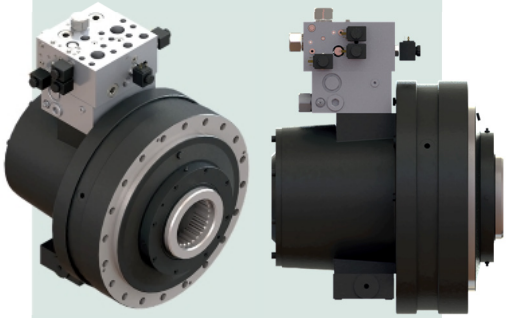
- **Freewheeling**
  Allows for least restrictions while turning shaft.
- **Cross over relief**
  Direct mounted to prevent shock loads.



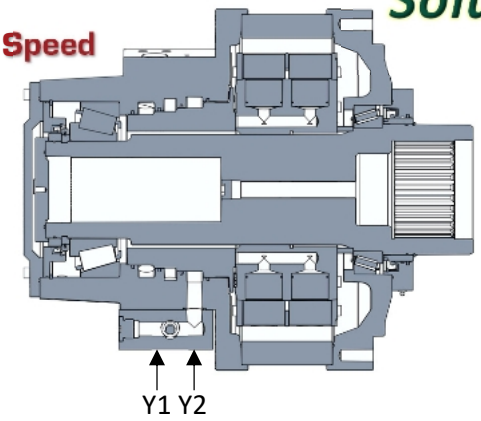
Black Bruin
No power like it.

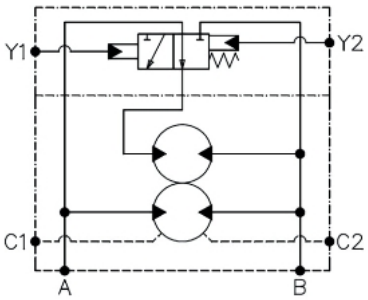
NORTH AMERICAN HYDRAULICS

S-series Motors
Solution Providers



2 Speed

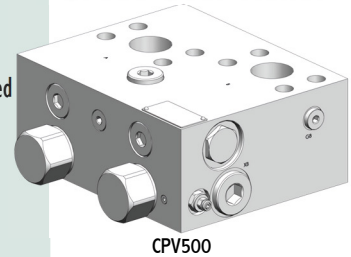




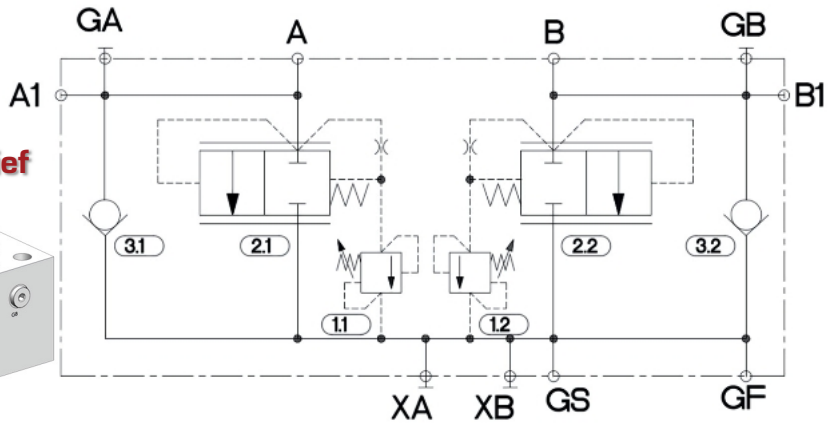
2 Speed Operation:

- 2 Speeds and 2 torques with the same hydraulic system
- Every other piston is moved to idle in the distribution block and from hydraulic fluid
- Motor switches to half displacement, speed increases to twice as fast and torques reduce by half
- Motor operates like a single speed motor when operating at full displacement

Cross Over Relief



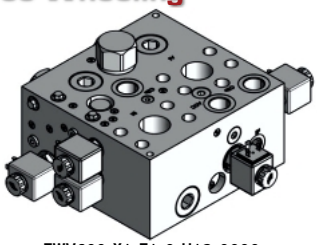
CPV500
1747001002



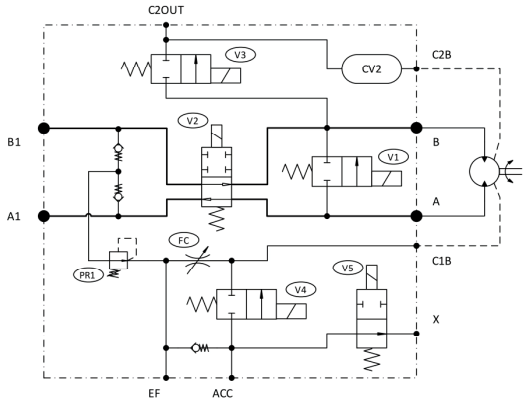
Cross Over Relief:

- Direct mount to A/B ports on motor
- Protects the motor from high pressure peaks
- Provides cavitation protection

Free Wheeling



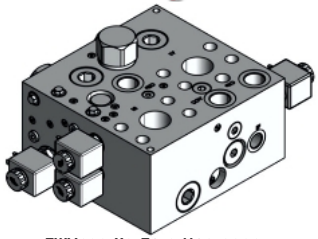
FWV600-X1-F1-0-U12-0000
1747002001



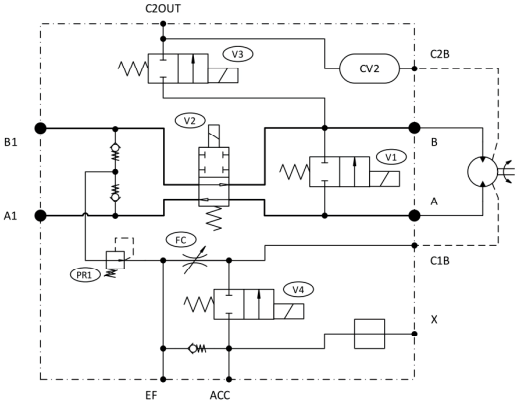
Free Wheeling:

- To freewheel pressurize the case to retract pistons
- Equalize pressure on ports A/B
- Case pressure at 0.5 bar higher than ports A/B
- Maximum case pressure is 10 bar peak, 2 bar nominal
- Damage can occur if pressure loss happens during operation
- From freewheel to power mode don't exceed 100 bar at time of shifting

Free Wheeling



FWV600-X0-F1-0-U12-0000
1747002000



Please contact NAHI for additional information

The above information should be used as a guide and is subject to change without notice. Please contact NAHI for proper selection.

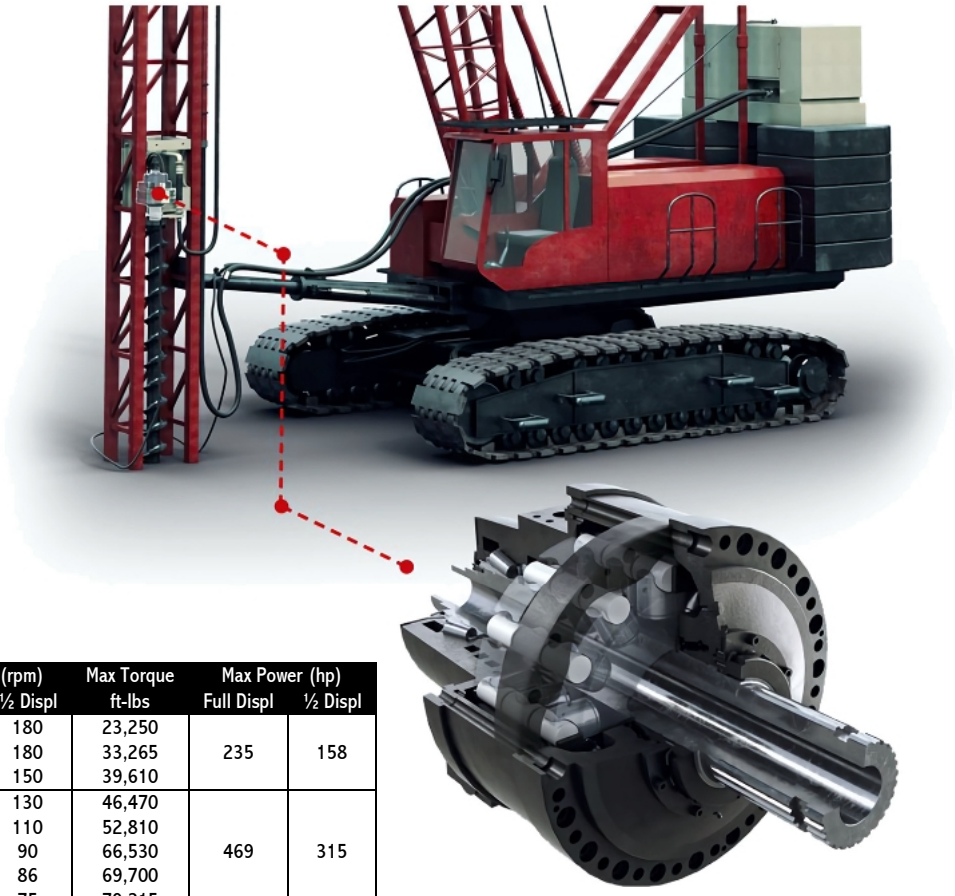
Black Bruin
No power like it.

NORTH AMERICAN HYDRAULICS

S-series Motors
Solution Providers

BLACK BRUIN HYDRAULIC MOTORS

Smooth Continuous Drilling



S-Series	Displacement in³	Max Pressure psi	Max Speed (rpm) Full Displ	Max Speed (rpm) ½ Displ	Max Torque ft-lbs	Max Power (hp) Full Displ	Max Power (hp) ½ Displ
S-1000	268.5	6500	180	180	23,250	235	158
	384.4		180	180	33,265		
	457.7		150	150	39,610		
S-2000	537.0	6500	130	130	46,470	469	315
	610.2		110	110	52,810		
	768.9		90	90	66,530		
	805.1		86	86	69,700		
	915.4		75	75	79,215		
S-3000	805.1	6500	85	85	69,700	670	449
	915.4	6500	75	75	79,215		
	1153.3	6500	60	60	99,780		
	1373.0	5510	50	50	100,310		

- Ideal for Auger/Crusher/Conveyor Applications
- Multi-speed function shift on the fly capabilities
- Axial and Radial load carrying capacity
- Cross over relief, Direct mounted

Black Bruin
No power like it.

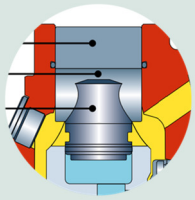
NORTH AMERICAN HYDRAULICS

Black Bruin S-series Interchange to Hagglunds CA and CB Series Motors

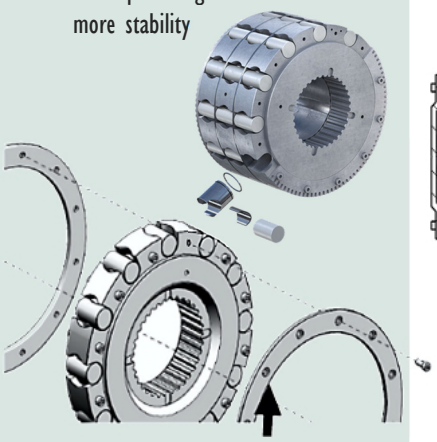
Solution Providers

Robust Design Features Where Black Bruin Stands Apart from Hagglunds:

- BBS uses a piston insert design on the rollers which is serviceable vs Hagglunds hydrodynamic lubrication
- Hagglunds minimum viscosity is 25 cst due to their pressure piston orifice versus BBS limit of 15 cst
- BBS piston inserts yield longer longevity and offers better contamination and cavitation conditions
- BBS offers provide for better life
- Hagglunds does not have guide rings on the piston rollers thus premature wear can be seen on an expensive piston assembly



- BBS uses nitrated guide rings to support the rollers in the cylinder block providing less friction and more stability



Black Bruin S-Series					Hagglunds CA Series				
Black Bruin Model	Displacement ccm	Female Splined Shaft	Max Pressure Bar	Max Speed rpm	Hagglunds Model	Displacement ccm	Female Splined Shaft	Max Pressure Bar	Max Speed rpm
Project-3140	3,140	N120	450	200	CA-050	3,140	N120	350	200
Project-4400	4,400	N120	450	180	CA-070	4,400	N120	350	180
S1000-4400	4,400	N120	450	180	CA-050 CA-070	3,140 4,400	N120 N120	350 350	200 180
S1000-6300	6,300	N140	450	180	CA-100	6,280	N140	350	190
S1000-7500	7,500	N140	450	150					
S2000-8800	8,800	N140	450	130	CA-140	8,800	N140	350	170
S2000-10000	10,000	N140	450	110					
S2000-12600	12,600	N150	450	90	CA-210	13,200	N150	350	85
S2000-13200	13,200	N150	450	86					
S2000-15000	15,000	N150	450	75					
S3000-13200	13,200	N150	450	85					
S3000-15000	15,000	N150	450	75	CB-280	15,100	N200	350	68
S3000-18900	18,900	N150	450	60	CB-280	17,600	N200	350	58
S3000-22500	22,500	N150	380	50					

S1000



S2000

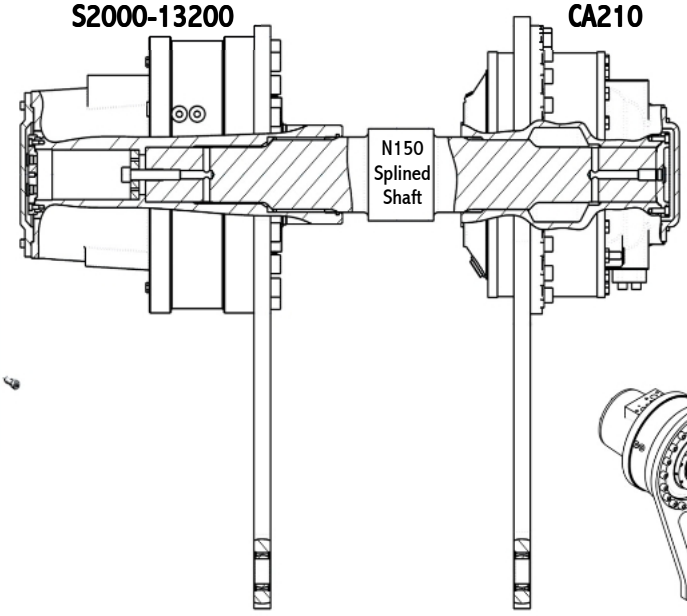


S3000

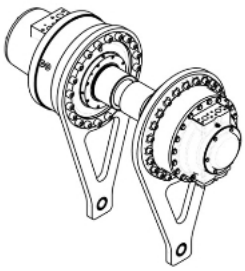


S2000-13200

CA210



Thermal Power Capacity			
Black Bruin Model	HP	Hagglunds Model	HP
S1000	117	CA-050	80
		CA-070	
S2000	235	CA-100	160
		CA-140	
		CA-210	
S3000	335	CB-280	160



Please contact NAHI for additional information

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Black Bruin
No power like it.

NORTH AMERICAN HYDRAULICS

Solution Providers

Crop Sprayer Wheel Motors

- New and Reman Motors Available
- Original OEM Product



Black Bruin Wheel Motor Models

405-115-124K, 405-115-134K, 405-125-221M, 405-125-231M, 405-125-224L, 405-125-234L, 405-160-224L, 405-160-234L, 405-160-221M, 405-160-231M, 406-200-221D, 406-200-231D, 406-242-121N, 406-242-131N, 406-242-124G, 406-242-134G, C24-201-1028, C51-211-0015, C51-211-0018, C52-211-0023, C53-011-0025, C53-211-0010, C53-211-0023, C55-011-0025, C55-016-0025, C55-301-0010, C55-301-0023, C55-801-0025, C56-211-0015

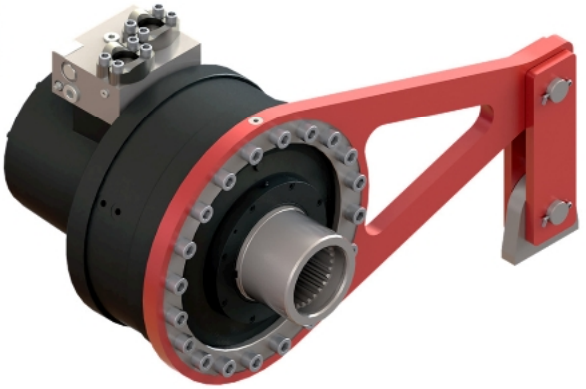
Black Bruin
No power like it.

NORTH AMERICAN HYDRAULICS

Direct Drive Systems
Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with World Class Partners to provide a Superior Direct Drive System. Many Combinations of Flow Capacity, Control Options and Installed Power Sizes Available.





NAHI Direct Drive System:

- Torque Up to 100,000 ft-lbs
- Speed Up to 180 rpm
- Power Up to 700 Hp
- 10 Drive Displacements
- 2 Speed Shift on the Fly
- Static Multi Disc Brake
- Many Shaft Configurations
- Shaft Interchange Hagglunds CA50, CA70, CA100, CA140, CA210

Available Accessories:

- Speed Sensor
- Counter Balance Valve
- Cross port Relief Valve
- Freewheel Valves
- Accumulators
- Torque Arm (Single and Double Mount)
- Heat Exchangers

Markets Served:

- Recycling and Waste Handling
  Pre-Shredders and Shredders
  Infeed
  Conveyor
- Marine and Winch
- Dredging
- Material Handling
- Mining
- Tunnel Boring
- Pulp and Paper
- Mineral Processing

Please contact NAHI for additional information.

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HPU			
AC Motor HP	Linde Pump Displacement ccm	Pressure psi	Flow GPM
100	75.9	5000	34.3
150	105.0		51.5
200	165.6		68.6
250	210.1		85.8
300	135.7 + 105.0		102.9
400	165.6 + 135.7		137.2
500	210.1 + 165.6		171.5
600	281.9 + 210.1		205.8
700	281.9 + 281.9		240.1

Black Bruin Motors	
Disp Cu In	Torque Ft-lbs
268	19,560
384	28,025
458	33,425
537	39,190
610	44,520
769	56,125
806	58,825
915	66,780
1153	84,150
1373	100,130

Integration with World Class Partners

Black Bruin
FLODRAULIC
Linde HYDRAULICS
Donaldson FILTRATION SOLUTIONS
Thermal Transfer Products
HUSCO INTERNATIONAL
ATLANTIC Fluid Tech
engineering beyond imagination

NORTH AMERICAN HYDRAULICS

Planetary Gearbox Drive
Solution Providers



North American Hydraulics, (NAHI, LLC), partnering with Bonfiglioli planetary gearbox drives.

Features and Benefits:

- Compact and powerful
- Ideal choice for severe duty shock load and impact applications
- Several options for mounting, gear layout, output shaft and motor interface
- 20 finely spaced frame sizes over the 1,000 to 1,100,000 Nm torque range
- Gear Unit Versions – In line, Right angle (with a spiral bevel gear set)
- Output Configuration – Foot and flange mounted, Output shaft: solid with key, splined, splined hollow, hollow with shrink disc
- Input Configurations – Flanged axial piston hydraulic motors, Hydraulic orbit motors, IEC and Nema motor adaptors, Solid input shaft
- Hydraulically released parking brake on request
- Electric Brake – DC and AC type

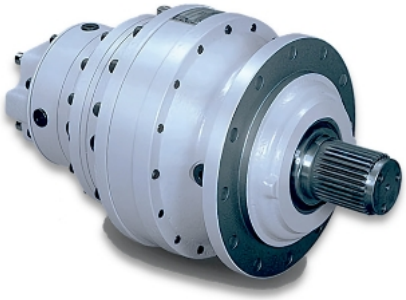
Proven Solutions for:

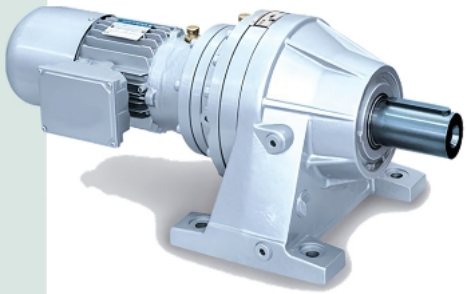
- Agriculture / Forestry
- Mining / Oil and Gas
- Construction / Industrial
- Marine / Utility
- Waste and Material Handling
- Railway

Please contact NAHI for additional information.

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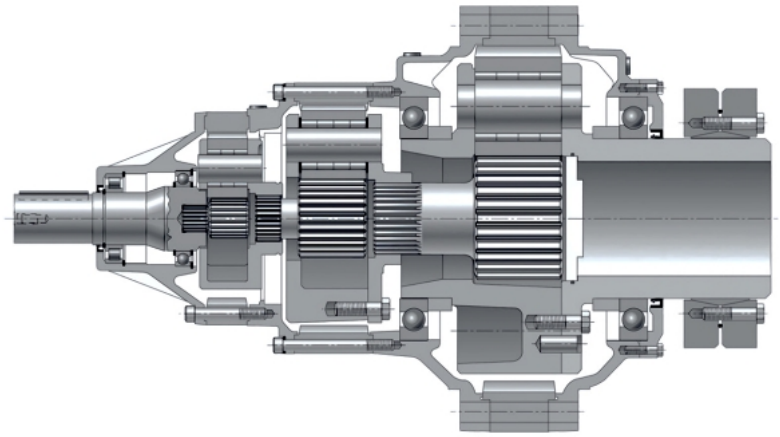
Please contact NAHI for proper selection.

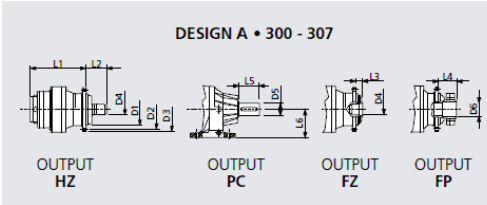


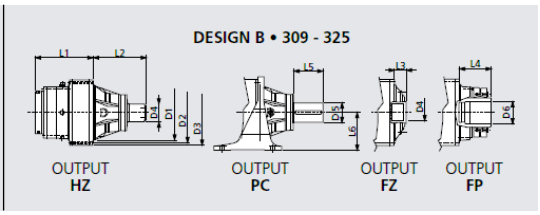


Planetary Drives – Bonfiglioli 300 Series

Type	Torque Output (Nm)	Max Power (kW)	Max Input Speed rpm	Inline Reduction Ratio	Design
300	1,000	20	3000	3.4 – 2700	A
301	1,750	30	3000	3.4 – 2700	A
303	2,500	40	3000	3.6 – 2800	A
304	3,600	50	3000	3.6 – 2500	A
305	5,000	60	3000	3.6 – 2800	A
306	8,500	75	2500	3.6 – 2900	A
307	12,500	100	2500	3.4 – 2400	A
309	18,000	130	2500	3.4 – 2400	B
310	25,000	150	2000	4 – 2500	B
311	40,000	180	2000	4 – 2100	B
313	55,000	200	2000	4 – 2200	B
314	80,000	225	2000	4 – 1800	B
315	100,000	250	1500	4 – 1800	B
316	135,000	270	1500	4.4 – 1200	B
317	170,000	300	1000	4 – 1900	B
318	250,000	340	1000	4.4 – 1100	B
319	350,000	380	500	4.8 – 1400	B
321	500,000	450	300	4.4 – 1100	B
323	800,000	850	300	4.6 – 1300	B
325	1,100,000	1050	300	4.6 – 1300	B



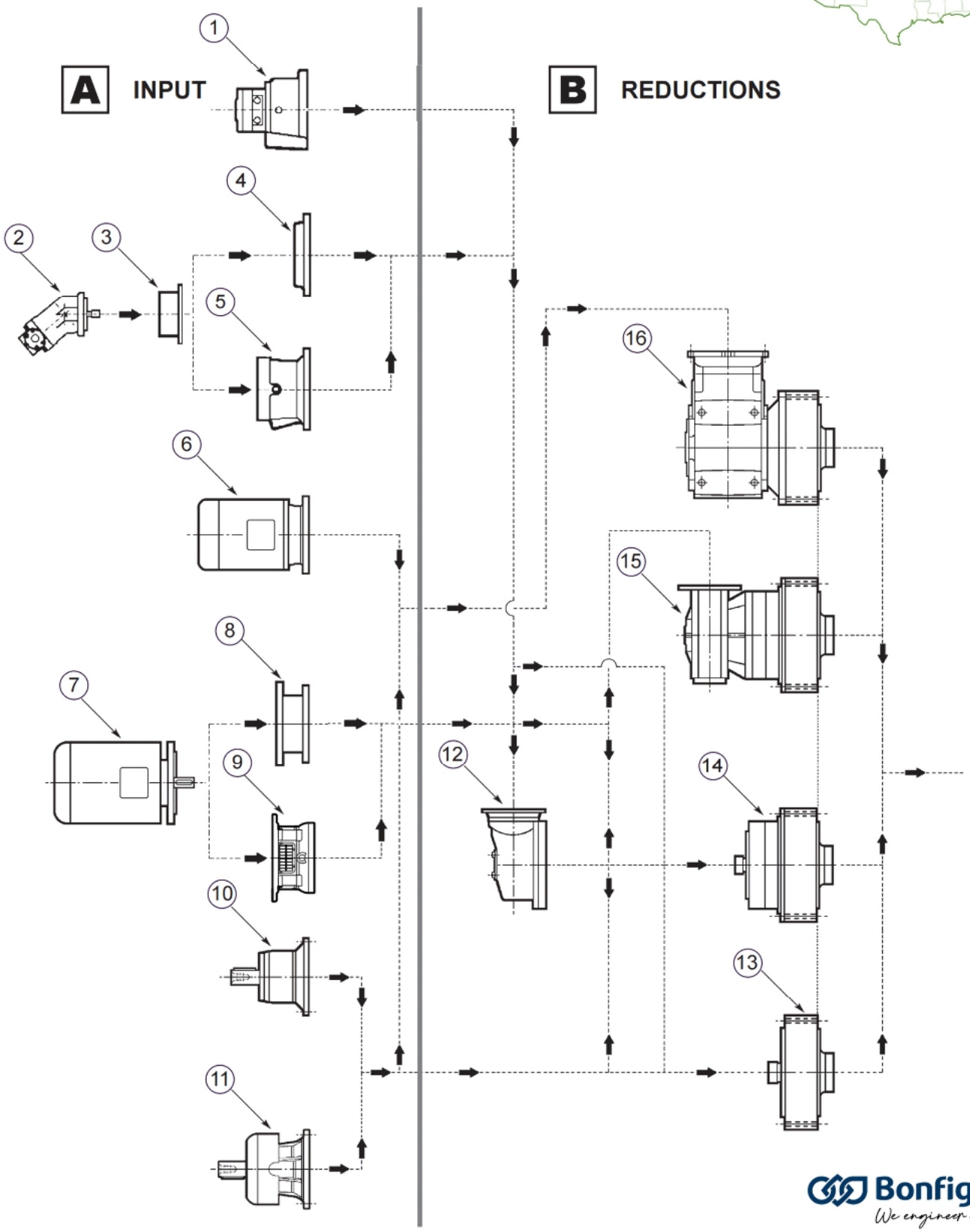




Bonfiglioli
We engineer dreams

NORTH AMERICAN HYDRAULICS

Planetary Gearbox Drive
Solution Providers



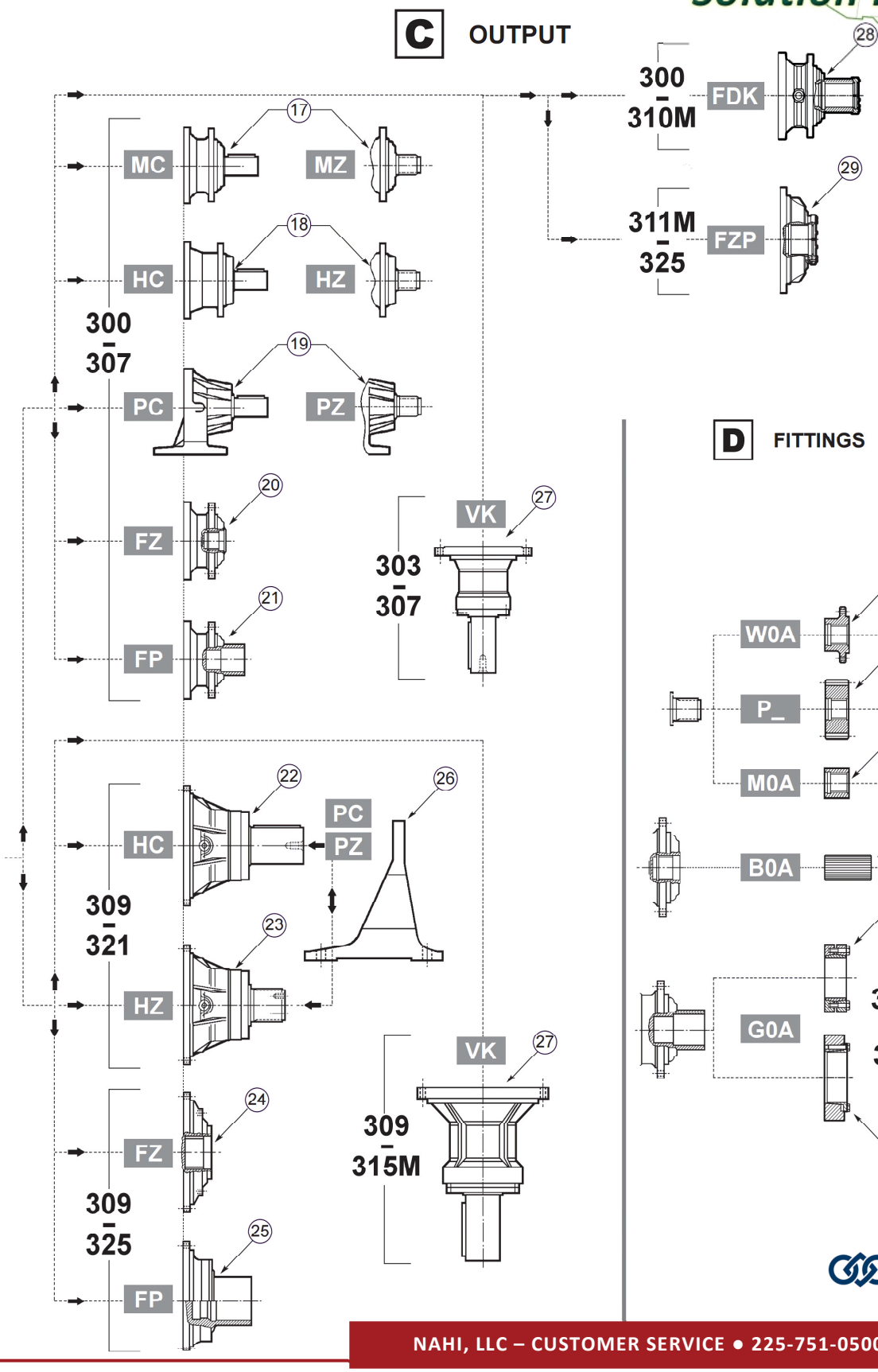
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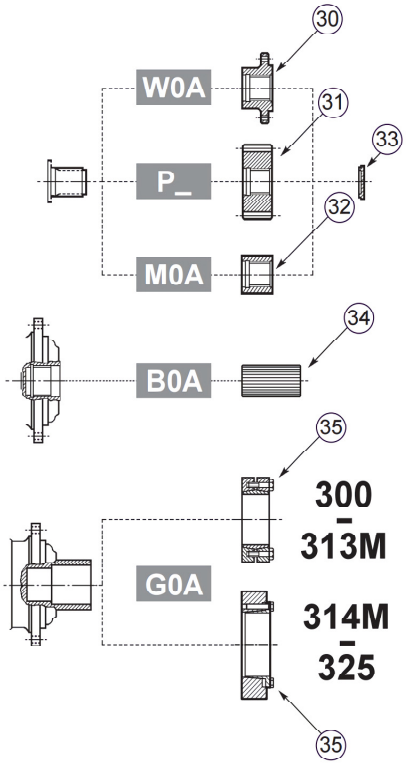
Planetary Gearbox Drive
Solution Providers



C OUTPUT



D FITTINGS



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Planetary Gearbox Drive
Solution Providers

Bonfiglioli 300 Series Gearbox Ratio Chart			
Size	**Ratio Options**	**Size**	**Ratio Options**
300L1	3.48, 4.26, 5.77, 7.20, 9.0	311ML1	4.09, 5.25, 6.23
300L2	12.1, 14.8, 18.2, 20.1, 24.6, 30.7, 33.3, 38.4, 41.5, 51.9, 64.8	311ML2	14.0, 16.7, 18.0, 21.5, 25.5, 27.6, 32.7, 38.8
300L3	51.6, 63.2, 69.9, 77.5, 85.6, 105, 116, 131, 142, 177, 192, 221, 240, 299, 374	311ML3	50.5, 60.2, 71.1, 77.3, 89.3, 104, 115, 133, 147, 161, 171, 191, 203, 245, 291
300L4	330, 403, 447, 494, 558, 616, 755, 819, 942, 1022, 1108, 1275, 1363, 1591, 1725, 2153, 2692	311ML4	348, 410, 512, 568, 627, 825, 986, 1058, 1230, 1415, 1680, 1766, 2096
301L1	3.48, 4.26, 5.77, 7.20, 9.00	313ML1	4.14, 5.40, 6.50
301L2	12.1, 14.8, 18.2, 20.1, 24.6, 30.7, 33.3, 38.4, 41.5, 51.9, 64.8	313ML2	14.2, 16.9, 18.5, 21.8, 25.8, 28.4, 33.6, 40.5
301L3	51.6, 63.2, 69.9, 77.5, 85.6, 105, 116, 131, 142, 177, 195, 221, 240, 299, 374	313ML3	51.1, 61.0, 72.0, 78.3, 92.4, 110, 120, 135, 143, 151, 163, 176, 182, 194, 209, 252, 304
301L4	330, 403, 447, 494, 558, 616, 755, 819, 942, 1022, 1108, 1275, 1383, 1591, 1725, 2153, 2692	313ML4	394, 452, 514, 564, 633, 695, 790, 889, 1014, 1117, 1266, 1394, 1502, 1817, 2187
303L1	3.60, 4.25. 6.20, 7.50, 9.67	314ML1	4.25, 5.33, 6.20
303L2	12.5, 15.3, 18.1, 20.8, 22.7, 24.5, 26.4, 30.8, 35.87, 38.4, 44.6, 55.8	314ML2	17.4, 22.3, 26.5, 28.0, 33.2, 38.6
303L3	53.4, 63.1, 72.3, 77.2, 90.2, 105, 113, 124, 141, 152, 164, 178, 190, 220, 258, 276, 321, 389, 402	314ML3	62.6, 73.9, 92.7, 108, 138, 164, 174, 206, 240
303L4	413, 446, 492, 556, 649, 718, 816, 896, 1018, 1098, 1278, 1370, 1586, 1854, 1991, 2243, 2799	314ML4	314, 394, 458, 495, 575, 588, 668, 738, 858, 926, 1038, 1099, 1277, 1485, 1796
304L1	3.60, 4.25, 5.33, 6.57	315ML1	4.25, 5.33, 6.20
304L2	12.5, 15.3, 18.1, 20.8, 22.7, 24.5, 30.8, 38.4, 47.3, 59.1	315ML2	17.4, 22.3, 26.5, 28.0, 33.2, 38.6
304L3	43.6, 53.4, 63.1, 72.3, 77.2, 90.2, 105, 111, 130, 141, 150, 165, 178, 202, 220, 273, 341, 426	315ML3	59.6, 71.1, 91.3, 108, 139, 165, 174, 207, 241
304L4	413, 446, 492, 556, 649, 702, 816, 1018, 1164, 1271, 1344, 1586, 1815, 1991, 2269, 2453	315ML4	302, 370, 441, 487, 533, 591, 672, 741, 862, 930, 1043, 1104, 1284, 1492, 1805
305L1	3.60, 4.25, 5.33, 6.20, 7.50	316ML1	4.25, 5.33
305L2	12.5, 15.3, 18.1, 20.8, 22.7, 24.5, 26.4, 30.8, 35.8, 38.4, 44.06, 55.8	316ML2	17.4, 21.8, 22.3, 26.5, 28.0, 33.2
305L3	53.4, 63.1, 72.3, 77.2, 90.2, 105, 113, 124, 141, 152, 164, 178, 190, 220, 258, 276, 321, 389, 402	316ML3	59.6, 71.1, 76.5, 89.3, 96.0, 114, 117, 139, 165, 174, 207
305L4	413, 446, 492, 556, 649, 718, 816, 896, 1018, 1098, 1278, 1370, 1586, 1854, 1991, 2243, 2799	316ML4	215, 253, 275, 318, 346, 399, 447, 500, 563, 628, 706, 784, 880, 1020, 1104, 1237, 1308, 1553
306L1	3.60, 4.25, 5.33, 6.20, 7.50	317ML1	4.1,5.3, 6.2
306L2	13.0, 15.3, 18.1, 22.7, 26.4, 28.4, 33.1, 38.4, 46.5, 56.3, 72.5	317ML2	16.9, 22.1, 26.6, 28.4, 34.1
306L3	53.2, 65.2, 77.0, 81.9, 88.3, 104, 112, 1212, 141, 152, 190, 205, 222, 238, 268, 288, 325, 405	317ML3	58.1, 69.3, 89.0, 106, 116, 138, 166, 179, 213, 252
306L4	391, 444, 509, 589, 636, 700, 809, 877, 1015, 1095, 1279, 1475, 1597, 1843, 2074, 2337, 2916	317ML4	378, 449, 493, 552, 619, 719, 792, 904, 1032, 1134, 1318, 1595, 1893
307L1	3.43, 4.09, 5.25, 6.23	318ML2	18.7, 23.5, 27.3
307L2	12.3, 14.7, 17.4, 21.8, 25.4, 28.0, 30.7, 32.6, 38.6, 46.7	318ML3	76.5, 98.2, 117, 123, 146, 170
307L3	51.3, 60.5, 74.1, 80.6, 93.0, 100, 113, 126, 139, 146, 162, 177, 202, 221, 239, 284, 336	318ML4	262, 313, 337, 402 422, 477, 515, 612, 647, 726, 768, 911, 1059
307L4	349, 406, 465, 509, 579, 654, 722, 801, 906, 999, 1157, 1274, 1408, 1591, 1767, 2041, 2423	319L2	20.7, 24.5, 26.0, 30.8, 35.8
309L1	3.43, 4.09, 5.25, 6.23	319L3	84.8, 100, 109, 126, 129, 137, 162, 188, 192, 223
309L2	12.3, 14.7, 17.4, 21.8, 25.4, 28.0, 32.6, 38.6, 46.7	319L4	291, 347, 410, 445, 515, 528, 558, 571, 625, 678, 717, 802, 850, 912, 1007, 1195, 1389
309L3	51.3, 60.5, 74.1, 80.6, 93.0, 100, 113, 126, 139, 162, 183, 202, 223, 239, 284, 336	321L3	75.3, 98.2, 118, 126, 152, 180
309L4	349, 406, 465, 509, 579, 654, 722, 801, 906, 999, 1149, 1286, 1380, 1605, 1723, 2003, 2423	321L4	258, 308, 395, 469, 515, 612, 736, 796, 945, 1122
310ML1	4.09, 5.25, 6.23	323L3	83.3, 105, 113, 120, 142, 165, 205
310ML2	14.7, 17.4, 21.8, 25.4, 28, 30.7, 32.6, 38.6, 46.7	323L4	341, 390, 438, 500, 569, 628, 703, 758, 882, 1025, 1101, 1279
310ML3	53, 62.6, 73.9, 80.3, 92.7, 101, 108, 119, 135, 149, 164, 177, 202, 230, 249, 295, 350	325L3	83.3, 105, 113, 120, 142, 165, 205
310ML4	392, 453, 507, 590, 637, 726, 798, 974, 1002, 1164, 1259, 1438, 1672, 1794, 2022, 2523	325L4	341, 390, 438, 500, 569, 628, 703, 758, 882, 1025, 1101, 1279

Bonfiglioli
We engineer dreams

NORTH AMERICAN HYDRAULICS

Gearboxes
Solution Providers







North American Hydraulics, (NAHI, LLC), partnering with Bonfiglioli gearboxes.

Features and Benefits:

- Compact and rugged design
- High torque and load capabilities
- Mechanical lifetime seals
- Rotating housing
- Available with failsafe parking brake, hydraulically released on request

Proven Solutions for:

- Agriculture / Forestry
- Mining / Oil and Gas
- Construction / Industrial
- Marine / Utility
- Waste and Material Handling
- Railway







Please contact NAHI for additional information.

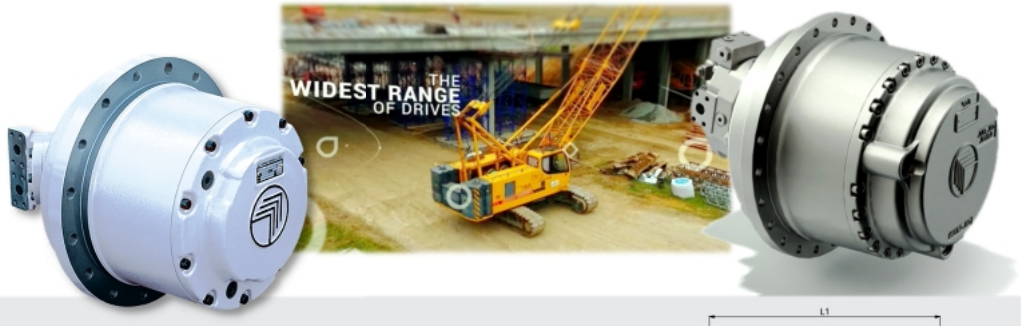
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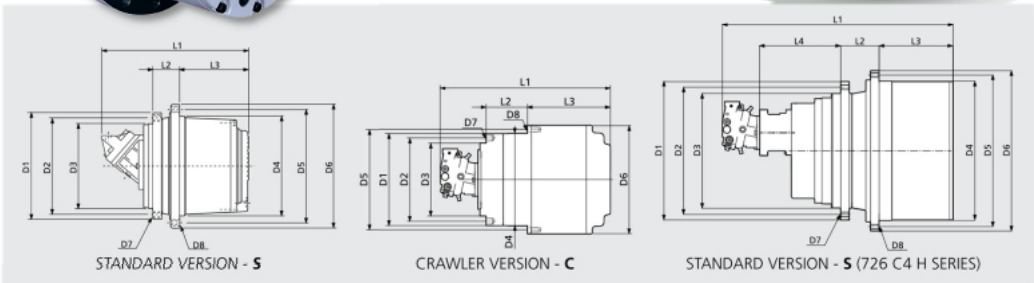
Please contact NAHI for proper selection.

Gear Boxes – Bonfiglioli 700C Series

Type	Torque (Nm)	Range of Ratios 1:	Max Input Speed rpm	Hydraulic Motor Drive inline	Braking Torque Right angle (Nm)	Min. Opening Pressure (bar)	Version	Weight (kg)
700 C1 H	1,000	5.25	1000	LS	140 – 250	15 – 25	S	20
701 C1	2,200	6.2	1000	LS	250 – 350	20 – 30	S	25
703 C2 H	4,000	19-40	3500	HS	210	18	S	42
705 C2 H	10,000	22-53	3500	HS	220 – 310	10 - 20	S	60
706 C3 B	18,000	68-173	3500	HS	250 – 500	10 – 20	S	95
707 C3 B	26,000	55-120	3500	HS	250 – 500	10 – 20	S	135
709 C3 B	30,000	55-147	3500	HS	250 – 600	10 – 20	S	180
710 C3 B	36,000	55-166	3500	HS	250 – 600	10 – 20	S	200
711 C3 B	45,000	71-163	3500	HS	400 – 800	10 – 20	S	270
713 C3 B	60,000	56-147	3000	HS	450 – 800	10 – 20	S	310
715 C3 B	85,000	62-156	3000	HS	600 – 1000	10 – 20	S	350
716 C3 B	100,000	83-174	3000	HS	800 – 1200	10 – 20	S	400
717 C3 H	130,000	92-211	3000	HS	800 – 1200	10 – 20	S	630
718 C3 H	180,000	87-263	3000	HS	800 – 1400	10 – 20	S	750
720 C3 H	220,000	175-287	3000	HS	800 – 1700	10 - 20	S; C	820
722 C3 H	330,000	296-492	3000	HS	1500 – 2500	15 – 30	S	1300
724 C4 H	450,000	350-428	3000	HS	1500 – 2500	15 – 30	S; C	1300
726 C4 H	625,000	248-282-330	3000	HS	2 x 1200	27	S; C	2800

LS = Low Speed Motor / HS = High Speed Motor





Bonfiglioli
We engineer dreams

NORTH AMERICAN HYDRAULICS

Rubber Track Undercarriage Kits
Solution Providers



North American Hydraulics, (NAHI, LLC), partnering with Chermack, manufacturing high quality rubber track undercarriage kits for machines requiring extended mobility.

Standard Tracks Include:

- 48", 60", 78" and 90"
- Weight limits from 1,000 lbs to 12,000 lbs
- Through-hardened 4140 track sprockets
- Idlers are forged with magnesium bronze captured bearings
- Adapter plates provided for ease of machine integration

Track Options Include:

- Aggressive black rubber tracks
- Turf friendly tracks
- Non-Marking grey tracks
- Steel tracks
- Expandable tracks are available to fit through narrow passages

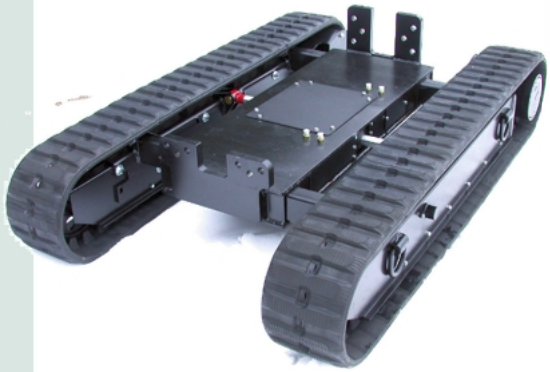
Drive Offerings Available From One of NAHI's Product Line:

- Nachi
- O&K
- Bonfiglioli
- Black Bruin
- Hansa

From Engine to the Ground, North American Hydraulics (NAHI) can provide complete hydraulic systems specific to your application.

CERTIFIED ISO 9001:2008 COMPANY

3D Solidworks Engineering
CNC Machinery Manufactured Parts
Solidworks CAD/CAM Machine Program



Steel & Rubber Tracks for Any Application

CHERMACK MACHINE INCORPORATED



Track with Adapter Plate - Unboltable



107" Custom Track



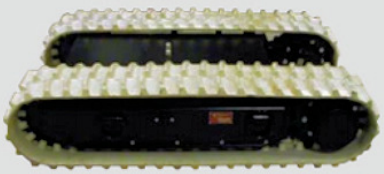
60" Custom Stainless Steel



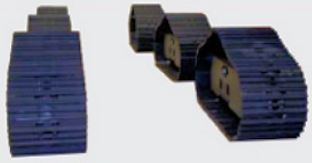
30" Custom Track



90" High Ground Clearance Open Frame



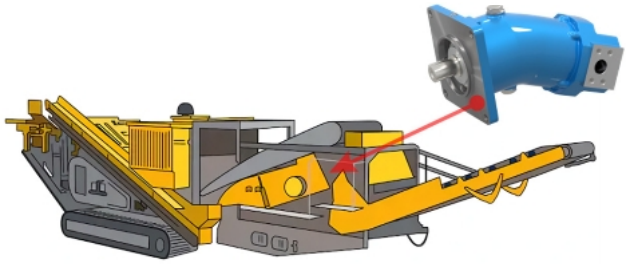
Non-Marking Box Frame for Indoor or Concrete



Steel Custom Tracks

NORTH AMERICAN HYDRAULICS

Axial Piston Motors
Solution Providers





North American Hydraulics, NAHI, LLC partnering with Dana Brevini, High Performance Axial Piston Motors offering Hydrostatic Solutions for Fixed and Variable Displacement applications.

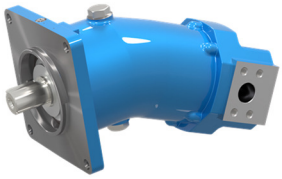
Features and Benefits:

- 40° and 28° bent axis designs
- Various control options
- High quality components and manufacturing techniques
- Fully laboratory tested and field proven
- Maximum efficiency and long life
- Heavy duty bearings for high radial and axial loads applications

Proven Solutions for:

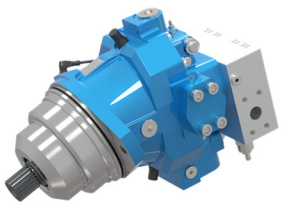
- Construction
- Material handling
- Agricultural
- Utility Machines
- Forestry
- Off-shore











Please contact NAHI for additional information

The above information should be used as a guide and is subject to change without notice.

Please contact NAHI for proper selection.

Fixed Displacement Motors

Models	Displacement in³	Displacement cm³	Max Speed rpm	Max Flow gpm	Max Pressure psi	Torque ft-lbs	Output Flange	Output Shaft
SH11C Motors	1.2	19.9	6300	33.0	6960	112.0	SAE"C" 4B	7/8"-13T
	1.9	31.9	6300	53.1		179.8		1.25"-14T
	3.4	56.4	5000	74.5		317.6		1.25"-14T
	3.8	63.3	5000	83.4		356.7		
	4.7	77.8	4500	92.4		438.5		
	5.3	86.2	4500	102.5		486.1		
	6.6	108.4	4000	114.3		611.0	SAE"D" 4B	1.75"-13T
	7.6	124.8	4000	132.0		703.1		1.75"-23T
	10.0	163.9	3600	155.7		923.5		1.75"-13T
	10.9	178.1	3600	169.2		1003.1		
SH11CR Motors	1.2	19.9	6300	33.0	6960	112.0	ISO	ISO
	1.9	31.9	6300	53.1		179.8		
	3.4	56.4	5000	74.5		317.6		
	3.8	63.3	5000	83.4		356.7		
	4.7	77.8	4500	92.4		438.5		
	5.3	86.2	4500	102.5		486.1		
	6.6	108.4	4000	114.3		610.0		
	7.6	125.0	4000	132.0		703.1		
	10.0	163.9	3600	155.7		923.5		
	10.9	178.1	3600	169.2		1003.1		

Variable Displacement Motors

Models	Displacement in³	Displacement cm³	Max Speed rpm	Max Flow gpm	Max Pressure psi	Torque ft-lbs	Output Flange	Output Shaft
SH7V Motors	3.7	61.0	8350	71.5	6960	343.4	SAE"C" 4B	1.25"-14T
	4.9	80.6	7350	85.0		453.9		
	6.9	112.5	6300	105.6		633.0	SAE"D" 4B	1.75"-13T
	9.8	160.8	5500	132.0		906.5		
	13.2	216.0	5100	165.4		1216.0	SAE"E" 4B	1.75"-15T
SH7VR Motors	3.7	61.0	8350	71.5	6960	343.4	ISO	ISO
	4.9	80.6	7350	85.0		453.9		
	6.8	112.5	6300	105.6		633.0		
	9.8	160.8	5500	132.0		906.5		

Options and Controls:
2 position and proportional hydraulic control
12 or 24 volt 2 position and proportional electrical control

DANA BREVINI® Motion Systems

NORTH AMERICAN HYDRAULICS

Hydraulic Filtration Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with Donaldson offering hydraulic filters and accessories to keep sophisticated heavy-duty mobile equipment running smoothly.

Filtration Solutions Engineered for All Types of Equipment



Features and Options:

- Low Pressure Filters, the most common type of filter in hydraulic circuits, rated for working pressures up to 350 psi. In-tank and in-line configurations are available to accommodate virtually any application.
- Medium Pressure Filters, offered in both spin-on and in-line cartridge-style can be used in applications up to 2000 psi. Duramax Filters are the highest rated medium pressure spin-on filters available.
- High Pressure Filters help protect critical components from catastrophic failure, rated for working pressures up to 6500 psi. Various porting sizes and types, including manifold style, are available.







Benefits:

- Reliable
- Long Lived
- Easy to Install

Please contact NAHI for additional information.

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Please contact NAHI for proper selection.

Comprehensive Hydraulic Filtration

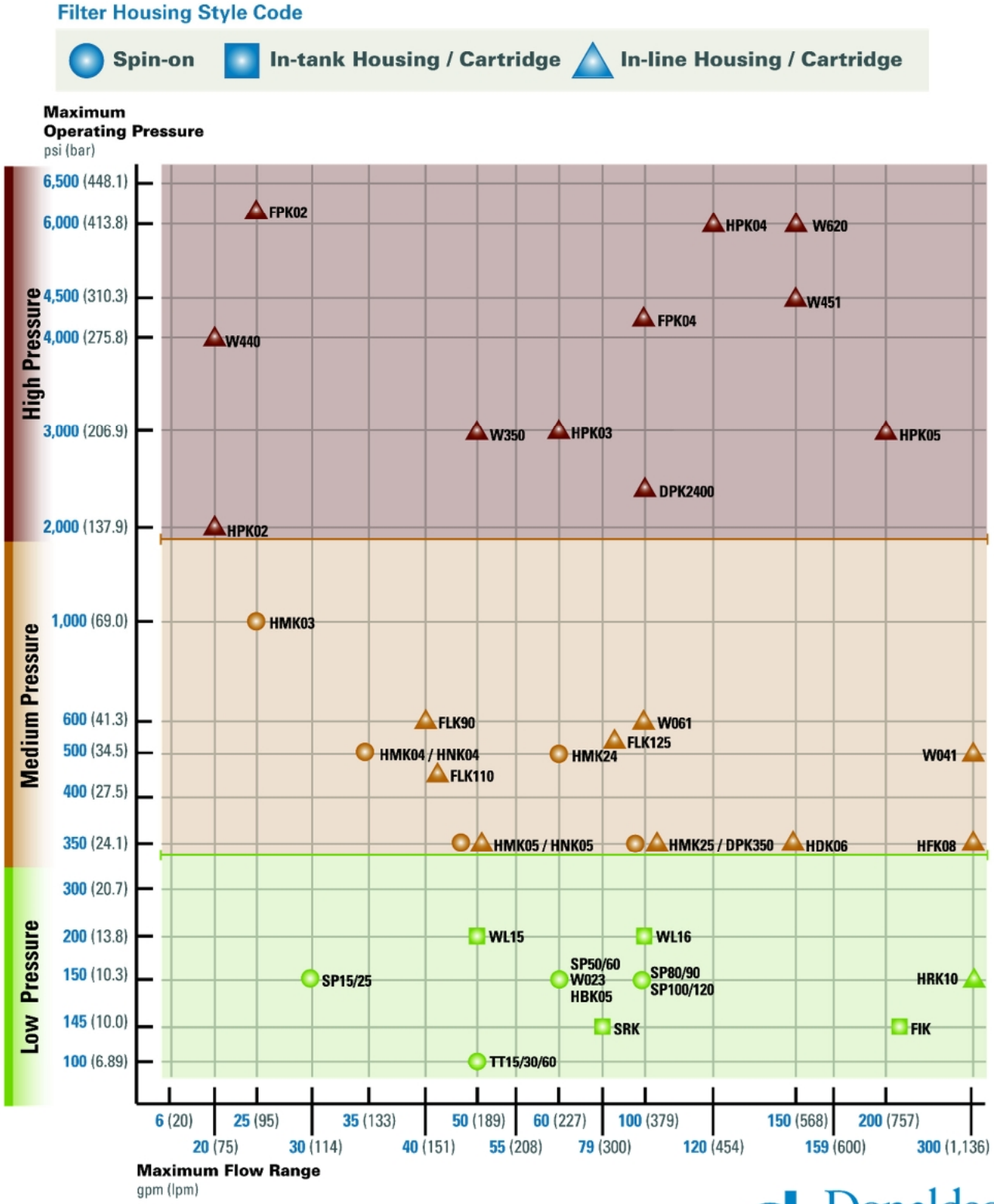
Model Series	Max Flow gpm	Max Pressure psi	Porting Size Options
LOW PRESSURE ◦ Spin-On Filters			
SP15/25	30	150	½", ¾" NPT, SAE-8, -12 O-ring
W023	60	150	1¼" NPT, SAE-20 O-ring
HBK05	60	150	1¼" NPT, SAE-20 O-ring
SP50/60	60	150	1¼" NPT, SAE-20 O-ring
SP80/90	100	150	1½" NPT, SAE-24 O-ring, 2" SAE 4-Bolt Flange Code 61
SP100/120	100	150	1½" NPT
TT15/30/60	50	100	¾", 1½" NPT
LOW PRESSURE ◦ In-Tank Filters			
WL15	50	200	SAE-24 O-ring, 1½" SAE 4-Bolt Flange Code 61
WL16	200	200	1½" NPT, SAE-24 O-ring, 1½" SAE 4-Bolt Flange Code 61
Flk	170	145	½" NPT, ¾" NPT, 1" NPT, SAE-8, -12, -16, -20, -24 O-ring, 2" SAE 4-Bolt Flange Code 61
SRK Combo	79	145	Inlet: SAE-16, -20 O-ring, Outlet: SAE-16 O-ring
LOW PRESSURE ◦ In-line Cartridge Filters			
HRK10	300	150	4" ANSI Flange, 8-bolt 150#
MEDIUM PRESSURE ◦ Spin-on Filters			
HMK03	25	1000	SAE-12 O-ring
HMK04	35	500	¾", 1" NPT, SAE-12, -16 O-ring
HNK04	35	500	SAE-12, -16 O-ring
HMK05	50	350	1¼" NPT, SAE-20 O-ring
HNK05	50	350	SAE-20 O-ring
HMK24	60	500	SAE-20 O-ring, 1¼" SAE 4-Bolt Flange Code 61
HMK25	100	350	1½" NPT, SAE-24 O-ring, 1½" SAE 4-Bolt Flange Code 61
MEDIUM PRESSURE ◦ In-line Cartridge Filters			
FLK90	40	580	SAE-12, -16 O-ring
FLK110	42	435	SAE-20 O-ring
FLK125	85	508	2" SAE 4-Bolt Flange Code 61
DPK350	100	350	1½" SAE 4-Bolt Flange Code 61
W061	100	600	SAE-12, -16, -20 O-ring
HDK06	150	350	2½" NPT
W041	300	500	SAE-24 O-ring, 2" or 2½" SAE 4-Bolt Flange Code 61
HFK08	300	350	3" NPT, SAE-20 O-ring
HIGH PRESSURE ◦ In-line Cartridge Filters			
HPK02	20	2000	SAE-12 O-ring
DPK2400	100	2400	1½" SAE 4-Bolt Flange Code 61
W440	20	4000	SAE-12 O-ring or Manifold Mounting
FPK02	25	6090	SAE-12 O-ring
W350	50	3000	SAE-12, -16 O-ring
HPK03	60	3000	SAE-12, -16 O-ring
FPK04	100	4350	SAE-20 O-ring
HPK04	120	6000	SAE-20 O-ring, 1¼" or 1½" SAE 4-Bolt Flange Code 61 or 62
W451	150	4500	SAE-24 O-ring, 1½" SAE 4-Bolt Flange Code 61 or 62, Manifold Mounting
W620	150	6000	SAE-16, -20, -24 O-ring, 1¼" SAE 4-Bolt Flange Code 62, 1½" SAE 4-Bolt Flange Code 61
HPK05	200	3000	2" SAE 4-Bolt Flange Code 61

Donaldson FILTRATION SOLUTIONS

Performance Under any Pressure

NORTH AMERICAN HYDRAULICS

Hydraulic Filtration
Solution Providers



Donaldson FILTRATION SOLUTIONS

NORTH AMERICAN HYDRAULICS

Axial Piston Motors
Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with Eaton Dowmax axial piston motors.

Features and Benefits:

- Quiet operation
- Robust construction
- Compact and easy installation
- High starting torque and high overall efficiency
- Smooth operation at low speed. Multiple pistons and double swash plate result in smooth rotation at speeds down to 1 rev/min
- High pressure – continuous operating pressure of 3990 psi
- Wide range of models – 13 displacements
- Speed pickup system available

Proven Solutions for:

- Winch drive
- Swing drive
- Conveyor
- Traction drive
- Stirrer drive
- Crusher drive



Please contact NAHI for additional information.

The above information should be used as a guide and is subject to change without notice.

Please contact NAHI for proper selection.





Dowmax Me - Axial Piston Motor

Model	Displacement in^3	Max Speed (rpm) Standard	Max Speed (rpm) High Power	Peak Pressure psi	Rated Horse Power (hp)	Torque ft-lbs
ME100	6.0	1000	1000		60	318
ME150	9.3	600	800		56	492
ME175	10.7	600	800		64	564
ME300B	18.3	660	800		121	974
ME350B	21.4	660	800		142	1,128
ME600B	36.6	500	600		184	1,932
ME750B	45.8	450	520		207	2,419
ME850B	51.7	400	450	4,600	208	2,735
ME1300A	82.1	200	390		185	3,872
ME1900	114.0	140	260		172	5,377
ME2600	157.3	110	230		213	7,427
ME3100	189.4	110	230		249	8,939
ME4100	250.0	75	200		283	11,794
MK300**	18.6/9.3	600	800		110/50	878/438
MK600**	36.7/18.4	300	600		165/108	1,733/870
Note:	***2 speed motor*					

2-Speed Motor

The front and rear piston travel independently, making use of the advantages of opposed piston and double swash plates motor.

- Slim configuration
- High starting efficiency
- Good low-speed performance
- Change-over between large and small displacement can be done while running with a load
- No separate pilot pressure is required for change-over because of the self-pressure utilized as a pilot pressure



EATON DOWMAX

NORTH AMERICAN HYDRAULICS

North American Hydraulics, (NAHI, LLC), partnering with Eaton Disc Valve Hydraulic Motors.



Disc Valve Hydraulic Motors

Solution Providers

Features and Benefits:

- Compact, Powerful Package – Proven Orbit Motor Principle
- Output Shaft
- No Shaft and Bearing Assembly (Bearingless Motor)
- Increased Shaft Seal & Bearing Life and True Bi-directionality – Three-Zone Pressure Design
- Port Configuration
- Mounting Flange

Proven Solutions for:

- Harvesting Equipment
- Swing Motor
- Brush Cutters and Mowers
- Turf Equipment
- Trencher / Grinders and Mixers
- Sprayers / Irrigation Reels
- Forestry Equipment
- Wood Products / Sprayers
- Directional Boring any place pressure relief protection is optimal for system or motor performance and life













Please contact NAHI for additional information.

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Please contact NAHI for proper selection.

Disc Valve Hydraulic Motors					
Models	**Displacement in³ / cm³**	**Max Speed rpm**	**Max Flow gpm**	**Max Pressure psi**	**Torque ft-lbs**
2000 Series Motors	2.1/34	1215	11	4500	1250
	2.5/41	1216	14	4500	1497
	4.0/66	1214	23	4500	2446
	4.9/80	908	20	4500	3035
	5.5/90	1042	25	4500	3458
	6.2/100	924	25	4500	3950
	8.0/130	720	25	4500	4970
	9.6/160	713	30	4500	5040
	11.9/195	577	30	4500	5890
	14.9/245	462	30	4500	7250
	18.7/305	365	30	4500	7820
	24.0/395	287	30	3250	8170
	29.8/490	230	30	2500	8225
4000 Compact Series Motors	9.8/160	699	30	4500	6108
	12.3/200	562	30	4500	7436
	15.4/250	450	30	4500	8272
	19.8/325	351	30	4500	9320
	24.6/405	282	30	4000	8153
	29.8/490	232	30	3750	10778
Delta Series Motors	6.9/113	831	25	4000	3697
	8.9/146	778	30	4000	4984
	12.1/198	516	30	4000	6421
	14.3/234	485	30	4000	7543
	15.4/252	450	30	4000	8236
	18.3/300	379	30	4000	9629
	21.2/347	327	30	4000	10698
	24.1/395	288	30	3500	10684
	28.7/470	241	30	3000	10824
	33.1/542	209	30	2500	10644
	39.6/649	175	30	2250	11100
	46.0/754	151	30	2000	10910
4000 Series Motors	6.7/110	868	25	4500	4160
	7.9/130	862	30	4500	4940
	9.9/160	693	30	4500	6240
	12.5/205	546	30	4500	7100
	15.0/245	532	35	4500	7470
	17.1/280	488	35	4500	8471
	19.0/310	422	35	4500	9420
	24.0/395	376	40	4250	10470
	30.0/495	305	40	3300	10350
	38.0/625	241	40	2600	10450
6000 Series Motors	11.9/195	866	45	4500	7620
	15.0/245	834	55	4500	9740
	19.0/310	698	60	4500	11990
	23.9/390	570	60	4500	14490
	30.0/490	454	60	4500	16670
	38.0/625	355	60	3500	16800
	45.0/735	303	60	3000	15040
	49.0/805	280	60	2500	16377
	60.0/985	230	60	2250	16580
10,000 Series Motors	21.0/345	784	70	4000	12310
	29.3/480	552	70	4000	17410
	40.6/665	396	70	4000	23080
	57.4/940	279	70	3750	30460

EATON

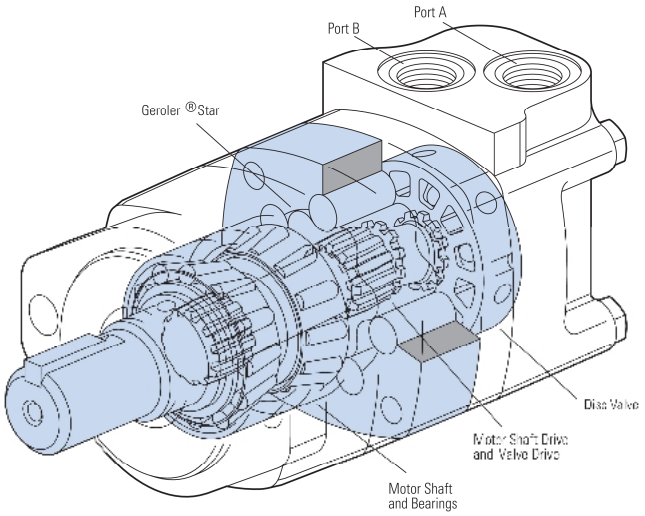
NORTH AMERICAN HYDRAULICS

Technical Details – Disc Valve Motors

Product Description

In the late 1950's the original low speed, high torque hydraulic motor was developed from a pump Geroter element consisting of an internal gear ring and a mating gear or star. While attaching the internal gear ring to the housing as a non moving part, oil was ported to pressurize and turn the internal star in an orbit around a center point. This slow turning star coupled with a splined drive to the output shaft became the Char-Lynn Orbit® motor.

A few years after this original Char-Lynn Orbit motor was introduced another original motor concept went into production. This motor had rolls incorporated into the internal gear ring, this element was identified by the name Geroler and is a registered trade name of Eaton Hydraulics. From these early years the Geroler motor has seen many design changes to make these Geroler motors the best the industry has to offer. Examine the simplicity of these Geroler disc valve motors shown below. Also examine all the following pages for high value Char-Lynn disc valve motors from Eaton Hydraulics.



Disc Valve Hydraulic Motors	
2000 Series Motors	The popular 2000 Series provides torque up to 7500 lb-in. This proven design is reliable and durable. Eaton has added options that make the motor more flexible to use in a wide variety of applications. The expanded displacement range using patented "Drive in Drive" technology is the latest innovation in the 2000 series of motors.
4000 Compact Series Motors	This new compact addition in the family of disc valve hydraulic motors produces the same amount of torque as the current 4000 Series. Yet, it is housed in an envelope similar to its smaller counterpart, the 2000 Series. The unit's intermittent torque rating is 10,800 lb-in. A variety of mounting options include two 2 bolt mounts (SAE A, SAE B), and four 4 bolt mounts (magneto, standard and wheel mounts). For added flexibility, the motor can be specified with either the larger size shafts of the 2000 Series of standard output shaft sizes of the 4000 Series, plus one new 1-1/2 inch straight (the small envelope and optional shaft sizes make this motor ideal for vehicles like skid-steer loaders whose hallmark is high power and productivity in a small framer).
Delta Series Motors	This wheel motor is the latest addition to the Char-Lynn product line. The Delta motor provides torques up to 11,500 in-lbs. Eaton has packed this motor with many "best in class" features: the optimized geroler profile ensures smooth operation; the disc valve technology has the best performance and the bearing capacity is the highest in the industry for very demanding applications.
4000 Series Motors	The 4000 Series offers up to 8600 in-lb of torque and 25 gpm (continuous ratings). This is the corner stone of the Char-Lynn line.
6000 Series Motors	With torque up to 15,000 in-lb and 40 gpm continuous, this motor is packed with power and smooth operation.
10,000 Series Motors	This is the biggest disc valve motor of our line with up to 46 gpm and 24,000 in-lb of torque in continuous mode, this motor is powerful and yet provides good efficiency.

NORTH AMERICAN HYDRAULICS

Low Speed High Torque Motors
Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with Eaton HP30 Hydraulic Motors.





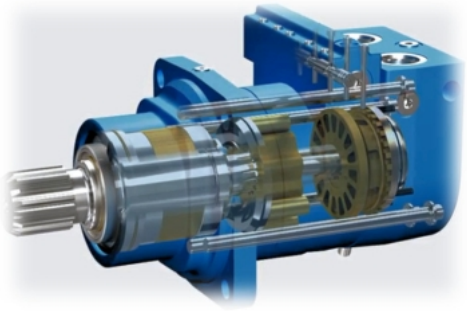
Features and Benefits:

- Patented Geroler Technology in an extremely compact powerful package
- Unique patented valving design which minimizes no load pressure drop for reduced parasitic heat build-up improving vehicle operating efficiency and reducing emissions
- High starting torque
- Output shaft
- Two-speed capability
- Series circuit capable
- Reliable and dependable performance



HP30 Motor - Low Speed High Torque Motors

Models	Displacement in³ / cm³	Max Speed rpm	Max Flow gpm	Max Pressure psi	Torque ft-lbs
HP30 Series Motors	21.0/344	770	70	5,500	15,876
	24.4/400	663	70	5,500	18,446
	26.5/434	610	70	5,500	20,034
	29.3/480	552	70	5,500	22,150
	41.3/677	392	70	4,500	25,605



Proven Solutions for:

- Grinders and Mixers
- Harvesters / Augers
- Sprayers
- Forestry Equipment
- Material Handling
- Horizontal/Vertical Drilling
- Metal Forming
- Skid Steer Loaders



HP30 Motor - Low Speed High Torque Motors

Models	Displacement High/Low in³	Displacement High/Low cm³	Max Speed High/Low rpm	Max Flow High/Low gpm	Max Pressure psi	Torque High / Low ft-lbs
HP30 Series Motors In Two-speed Mode	14.0/21.0	229/344	743/495	45/45	5,500	10,584/15,876
	16.3/24.4	267/400	639/426	45/45	5,500	12,297/18,446
	17.7/26.5	289/434	588/392	45/45	5,500	13,356/20,034
	19.5/29.3	320/480	532/355	45/45	5,500	14,767/22,150
	27.5/41.3	477/677	378/252	45/45	5,500	17,068/25,602

Other Products Offered by Eaton



Please contact NAHI for additional information.

The above information should be used as a guide and is subject to change without notice.

Please contact NAHI for proper selection.

NORTH AMERICAN HYDRAULICS

Radial Piston Motors
Solution Providers





North American Hydraulics, (NAHI, LLC), partnering with Eaton HydreMAC radial piston motors.

Features and Benefits:

- High efficiency lowers operating costs
- Very low pressure drop delivers more output torque
- Symmetrical design reduces uneven loading to increase operating life
- Replaceable wear surfaces lowers maintenance costs by extending maintenance intervals

Proven Solutions for:

- Pulp and Paper
- Mining
- Recycling
- Marine
- Oil and Gas
- Processing
- Civil Engineering



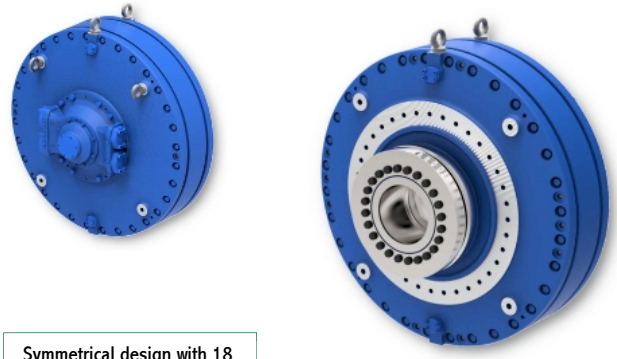
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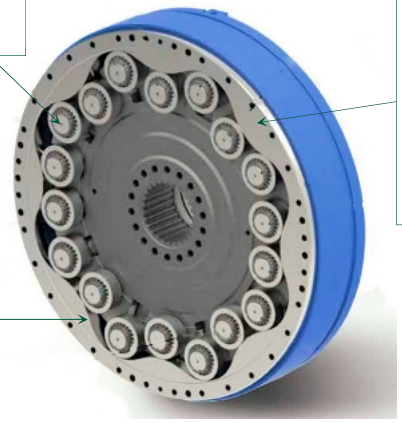
The above information should be used as a guide and is subject to change without notice.

Please contact NAHI for proper selection.

HydreMAC Radial Piston Motor

Model	Displacement in^3	Max Speed (rpm) Standard	Max Speed (rpm) High Power	Peak Pressure psi	Rated Horse Power (hp)	Torque ft-lbs
RCC 1013	780	65	100	6,090	1,200	1,031
RCC 1016	982	50	85		1,070	1,295
RCD 1020	1231	45	70		1,104	1,625
RCD 1025	1546	40	60		1,189	2,041
RCE 1030	1867	35	50		1,196	2,467
RCE 1036	2165	32	42		1,165	2,858
RCF 1042	2575	28	38		1,254	3,406
RCF 1050	3093	25	35		1,388	4,087





EATON | Hydre-MAC

built to go the distance

NORTH AMERICAN HYDRAULICS

Low Speed High Torque Motors
Solution Providers





North American Hydraulics, (NAHI, LLC), partnering with Eaton Spool Valve Motors.

Features and Benefits:

- Compact, Powerful Package – Proven Orbit Motor Principle
- Infinite Bearing Life – Hydrodynamic Journal Bearings
- High Efficiency – Constant Clearance Geroler
- Increased Shaft Seal & Bearing Life – Three-Zone Pressure Design
- Increased Drive Life – Reduced Drive Running Angle
- Reduced Leakage – High-pressure Seals
- Modular Design

Proven Solutions for:

- Harvesters / Augers / Spreaders
- Machine Tools
- Conveyors / Winches
- Turf Care Equipment
- Food Processing
- Aerial Work Platforms
- Anywhere a compact drive with high output torque is needed











Spool Valve Motors - Low Speed High Torque Motors

Models	Displacement in³ / cm³	Max Speed rpm	Max Flow gpm	Max Pressure psi	Torque ft-lbs
J Series Motors	.50/8.2	1992	5.5	3190	193
	.79/12.9	1575	6.5	3190	321
	1.21/19.8	1043	6.5	3190	425
	1.93/31.6	650	6.5	2765	733
	3.00/50.0	393	6.5	2175	765
S Series Motors	3.6/59	963	18	2500	1271
	4.6/75	792	20	2500	1649
	5.7/97	607	20	2500	1992
	7.3/120	472	20	2500	2582
	8.8/144	394	20	2350	2870
	10.1/166	343	20	2300	3191
	11.4/187	304	20	2250	3533
	13.7/225	253	20	2050	3843
	18.2/298	190	20	1800	4467
	22.7/372	153	20	1500	5200
T Series Motors	2.2/36	1021	10	2750	824
	3.0/49	906	15	2750	1131
	4.0/66	849	18	2750	1488
	4.9/80	694	20	2750	1872
	6.2/102	550	20	2750	2339
	8.0/131	426	20	2500	2718
	9.6/157	355	20	2500	3178
	11.9/195	287	20	2500	3864
	14.9/244	229	20	2250	4290
	18.7/306	183	20	1800	4275
	22.6/370	152	20	1500	4300
W Series Motors	4.9/80	267	6	2600	1676
	7.7/126	288	8	2600	2640
	9.4/154	214	9	2600	3301
	11.9/195	200	10	2600	3882
	15.3/251	200	14	2400	4849
	18.5/303	200	16.5	2000	4769
	22.8/374	200	20	1800	4970
H Series Motors	2.2/36	1021	10	2400	668
	2.8/46	969	14	2400	876
	3.6/59	953	17	2400	1076
	4.5/74	760	18	2400	1401
	5.9/97	585	18	2400	1829
	7.3/120	469	20	2400	2278
	8.9/146	385	20	2300	2653
	9.7/159	353	20	2250	2824
	11.3/185	304	20	2150	3151
	14.1/231	243	20	2000	3671
	17.9/293	192	20	1800	4121
	22.6/370	152	20	1500	4283
	45.1/739	74	20	800	4600

Please contact NAHI for additional information.

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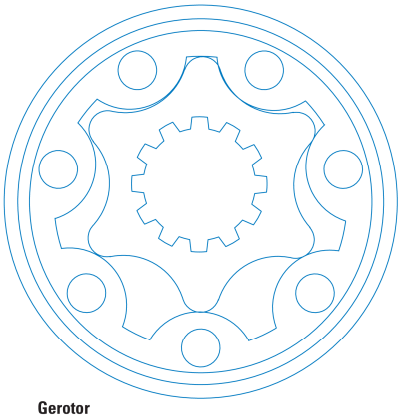
Please contact NAHI for proper selection.

EATON

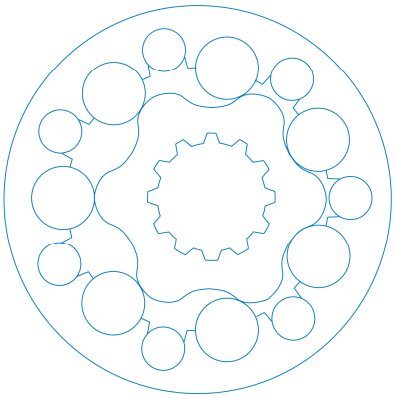
NORTH AMERICAN HYDRAULICS

Technical Details – Spool Valve Motors

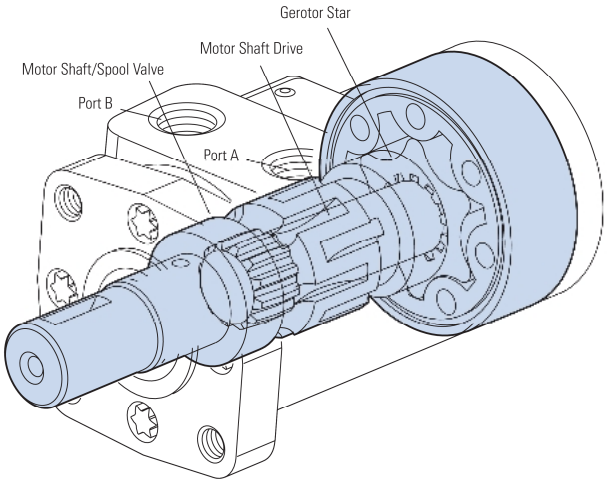
Spool valve technology is typically used where compact, economical solutions are most needed. Spool valve motors use a spool valve to precisely time and control flow through the orbit gear set (Gerotor or Geroler). Inlet flow is directed into and out of the orbit set via slots in the spool and passages through the motor housing. The result is a very cost-effective compact package suited to many application requirements. The three primary components in the motor are the orbit star, drive and output shaft. H, S and T Series incorporate the spool valve and hydrodynamic bearings in the motor shaft. The W series is similar except a ball bearing is used for the front bearing for increased side-load capacity. Due to its compact size and high speed capability, the J Series is unique and utilizes a separate dedicated spool and spool valve drive. All motors utilize Eaton's constant-clearance Geroler technology except the H Series, which continues to use the time-proven H motor gerotor set. These motors all use a three-zone pressure design consisting of three unique pressure areas: 1) inlet, 2) return, 3) case. This provides the capability to limit motor case pressure and allows the use of several case pressure options for extended shaft seal and thrust bearing life.

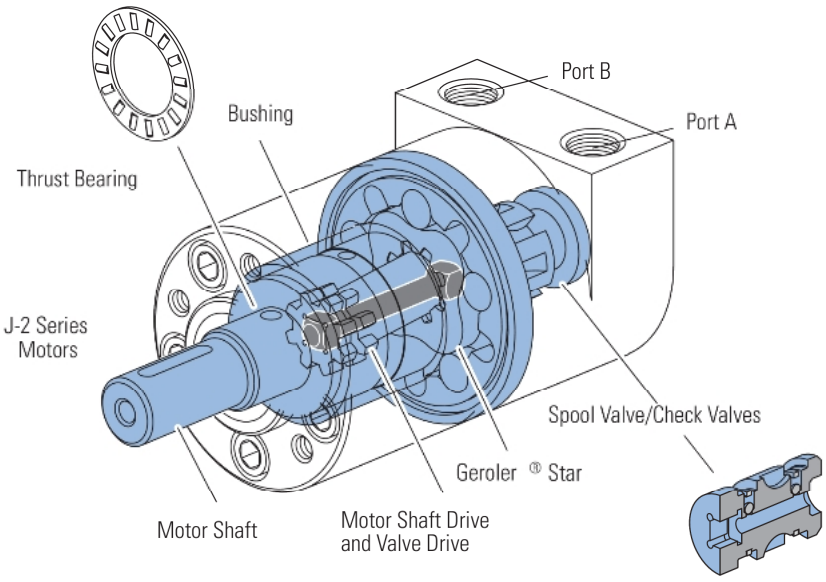


Gerotor



Geroler





EATON

NORTH AMERICAN HYDRAULICS

Low Speed High Torque Motors
Solution Providers







North American Hydraulics, (NAHI, LLC), partnering with Eaton VIS (Valve-In-Star) Hydraulic Motors.

Features and Benefits:

- Patented VIS Geroler Technology in an extremely compact powerful package
- Simplified design with only three moving components: geroler star, drive, output shaft
- Pressure-balance Geroler improves efficiency offering the highest output torque in its class
- Shuttle valve option for reliable internal drive lubrication to reduce system temperatures
- High horsepower density
- Variety of optional features including two-speed option, and case flow solutions for both closed-loop and open-loop applications.
- Design flexibility
- Reliable and dependable performance







Proven Solutions for:

- Skid Steer Loaders / Sprayers
- Mini Excavators / Augers
- Trenchers/Grinders/Mixers
- Forestry Equipment / Sprayers
- Underground Boring Equipment
- Irrigation Reels
- Material Handling Equipment
- Large Turf Care Equipment

Please contact NAHI for additional information.

The above information should be used as a guide and is subject to change without notice.

Please contact NAHI for proper selection.

VIS - Valve-In-Star Motors - Low Speed High Torque Motors

Models	Displacement in³ / cm³	Max Speed rpm	Max Flow gpm	Max Pressure psi	Torque ft-lbs
VIS 40 Series Motors	19.8/325	454	45	5500	17421
	24.4/400	368	45	5500	14137
	30.7/505	293	45	5500	21919
	34.9/570	257	45	5500	24918
	38.5/630	233	45	5500	28000
	41.7/685	215	45	5500	28000
	48.0/785	187	45	4355	28000
	57.4/940	148	45	3621	28000
VIS 40 Series Motors In Two-speed Mode	In the low speed high torque (LSHT) mode, torque and speed value are equal to those of the conventional VIS 40 motor. In the high speed low torque (HSLT) mode, rotation speed is increased by fifty percent and torque output is reduced by one third. The motor will function with equal shaft output in either rotation direction (CW or CCW) in both LSHT and HSLT modes.				
VIS 45 Series Motors	38.6/630	284	50	5500	27530
	48.6/805	220	50	5500	32940
	60.5/990	183	50	5500	40269
	76.0/1245	143	50	4465	47592
	95.0/1560	115	50	3570	50000
VIS 45 Series Motors In Two-speed Mode	In the low speed high torque (LSHT) mode, torque and speed value are equal to those of the conventional VIS 45 motor. In the high speed low torque (HSLT) mode, rotation speed is increased by fifty percent and torque output is reduced by one third. The motor will function with equal shaft output in either rotation direction (CW or CCW) in both LSHT and HSLT modes.				

Other Products Offered by Eaton

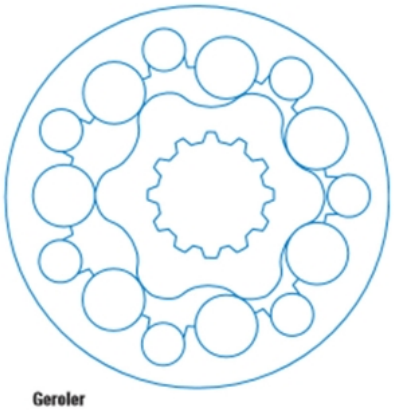
EATON Char-Lynn



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NORTH AMERICAN HYDRAULICS

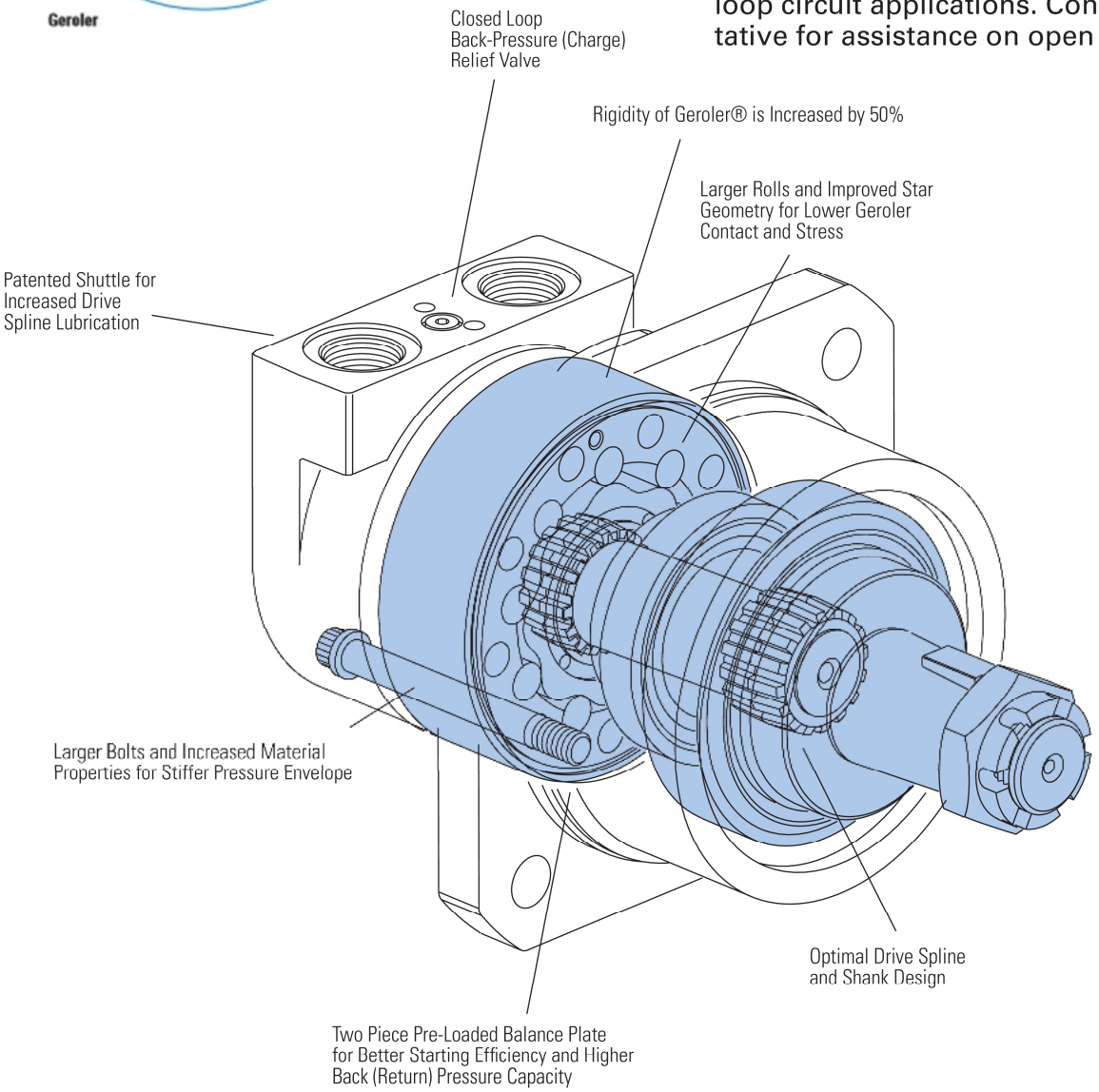
Technical Details – VIS Motors



Geroler

The VIS (Valve-in-Star) Motors are the next step in the evolution of the low speed high torque (LSHT) hydraulic motors. The VIS design provides design advantages over other types of LSHT hydraulic motor valving resulting in a more compact package with better efficiency and higher pressure capability. These improvements have shown significant packaging and performance advantages in applications such as skid steer loaders, mini excavators, trenchers and logging equipment.

VIS motors are primarily intended for use in closed loop circuit applications. Consult your Eaton representative for assistance on open loop circuit applications.



NORTH AMERICAN HYDRAULICS

Valves, Servo Controls, Diverters, Handles

Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with EBI, world leaders in the production of hydraulic valves for mobile machinery.

Functions and Benefits:

- Parallel and tandem circuit available
- Compact directional valve with low pressure losses
- Interchangeable spools
- Wide range of auxiliary valves on the ports
- Availability of manual, pneumatic, hydraulic and electrohydraulic actuations

Proven Solutions for:

- Telehandlers
- Mini-excavators
- Medium and Large Sized Backhoe Loaders
- Forestry Cranes
- Truck Cranes
- Vast array of Earth-moving Machines

engineering beyond imagination

Please contact NAHI for additional information

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Please contact NAHI for proper selection.

ECS08A



ECS10A



ECS12A



ECM08A



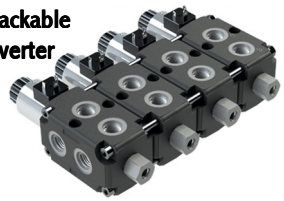
ECM08B



Monoblock Diverter



Stackable Diverter



EBI Sectional Valves

SPECIFICATIONS	ECS08A	ECS10A	ECS12A
Number of sections	1-12		
Parallel circuit	▪	▪	▪
Tandem circuit	▪	▪	▪
Parallel circuit stroke (mm) [in]	6 [0.24]	7 [0.28]	8 [0.32]
Float spool extra stroke (mm) [in]	5 [0.20]	4.5 [0.18]	6 [0.24]
Spool pitch (mm) [in]	36 [1.42]	41 [1.62]	48 [1.89]
Spool diameter (mm) [in]	14 [0.55]	16 [0.63]	19 [0.75]
Nominal flow (l/min) [GPM]	50 [12]	100 [25]	150 [40]
Operating pressure (bar) [psi]	350 [5000]		
OPTION CHART	**ECS08A**	**ECS10A**	**ECS12A**
Pilot operated pressure relief valve	▪	▪	▪
Solenoid dump valve 12 VDC	▪	▪	▪
solenoid dump valve 24 VDC	▪	▪	▪
Main anticavitation check valve	▪	▪	▪
SPOOL ACTUATION	**ECS08A**	**ECS10A**	**ECS12A**
Manual actuation	▪	▪	▪
Hydraulic actuation	▪	▪	▪
Electrohydraulic actuation	▪	▪	▪
SPOOL RETURN ACTION	**ECS08A**	**ECS10A**	**ECS12A**
3 positions spring centered	▪	▪	▪
Pneumatic control	▪	▪	▪
Detent in position ½ - 1 - 2	▪	▪	▪
Detent in 4th position	▪	▪	▪
AUXILIARY VALVES	**ECS08A**	**ECS10A**	**ECS12A**
Fixed setting combined valve	▪	▪	▪
Fixed setting anticavitation valve	▪	▪	▪
Adjustable pilot combined valve		▪	▪

EBI Monoblock Valves

SPECIFICATIONS	ECM08A*	ECM08B
Number of sections	2-8	1-7
Stroke (mm) [in]	6 [0.24]	5.5 [0.22]
Extra stroke (mm) [in]	5 [.20]	4.5 [0.18]
Spool pitch (mm) [in]	36 [1.42]	
Nominal flow (l/min)	50 [12]	
Operating pressure (bar) [psi]	350 [5000]	
Port size (BSP) [SAE]	G 3/8 [08]	

* Can include optional port reliefs, anti-cavitation and/or load checks on each section.

EBI Monoblock and Stackable Diverters

TYPE	Monoblock		Stackable	
SPECIFICATIONS	**EDM08A**	**EDM10A**	**EDS08A**	**EDS10A**
Number of sections	1		2/3/4	
Nominal flow (l/min) [GPM]	50 [14]	100 [28]	50 [14]	100 [28]
Operating pressure (bar) [psi]	250 [3625]		250 [3625]	
Operating pressure by using external drain (bar) [psi]	310 [4500]		310 [4500]	
Max shifting pressure (bar) [psi]	130 [2000]		130 [2000]	
Diverter valve stroke (mm) [in]	3.2 [0.13]		3.2 [0.13]	
Port size (BSP) [SAE]	G3/8 [08]	G1/2 [10]	G3/8 [08]	G1/2 [10]

NORTH AMERICAN HYDRAULICS

Valves, Servo Controls, Diverters, Handles

Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with EBI, world leaders in the production of hydraulic valves for mobile machinery.

Features and Benefits:

- Compact and light weight joysticks
- Progressive and sensitive operation
- Precise control and precise metering
- Low operating effort
- Optimised angular movements of joystick and foot pedals
- Control element protected with rubber bellow
- High durability and maintenance free

Proven Solutions for:

- Telehandlers
- Mini-excavators
- Medium and Large Sized Backhoe Loaders
- Forestry Cranes
- Truck Cranes
- Vast array of Earth-moving Machines

engineering beyond imagination

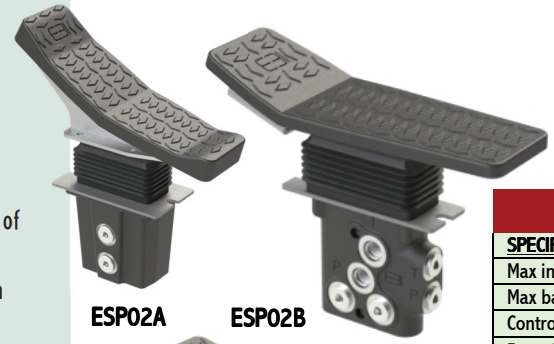
Please contact NAHI for additional information

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Please contact NAHI for proper selection.



ESJ01A ESJ02A ESJ02D



ESP02A ESP02B



ESP04A





EBI Joysticks Control			
SPECIFICATIONS	ESJ01A	ESJ02A	ESJ02D
Max input pressure (bar) [psi]	100 [1450]		
Max back-pressure on T line (bar) [psi]	3 [43]		
Control max flow on ports (l/min) [GPM]	15 [4]		
Port size (BSP) [SAE]	G1/4 [06]		
Number of axis	Single axis	2 axis	2 differential area
Mounting hole (mm)	95	90	80

EBI Foot Pedals Control			
SPECIFICATIONS	ESP02A	ESP04A	ESP02B
Max input pressure (bar) [psi]	100 [1450]		
Max back-pressure on T line (bar) [psi]	3 [43]		
Control max flow on ports (l/min) [GPM]	15 [4]		
Port size (BSP) [SAE]	G1/4 [06]		
Number of axis	Single foot pedal	Double foot pedal	Single foot pedal

EBI Multifunctional Handles			
MODELS	EHM1	EHM2	EHM3
SPECIFICATIONS	Without Micro-switch	One Micro-switch	With Dual Micro-switch

EBI Configurable and Multifunctional Handles	
MODELS	EHC1
Specifications and Features	Designed for EBI Servocontrols Ergonomic design ON/OFF and proportional functions Multiple roller Rocker switch Enable trigger control IP configuration driven Configurable options combination Color and logo personalization on request

NORTH AMERICAN HYDRAULICS

International Fluid Power Society

NATIONAL FLUID POWER ASSOCIATION · NFPA ·

Custom Power Units
Solution Providers





TESTED AND CERTIFIED ENGINEERED SOLUTIONS TO INDUSTRY STANDARDS

















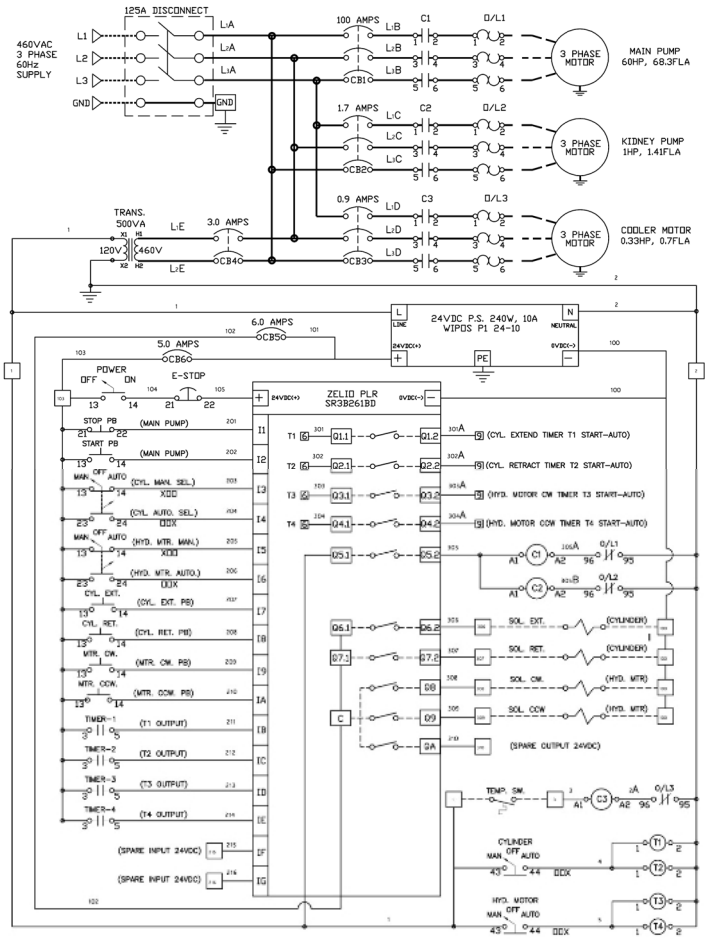
Motors • Pumps • Gearboxes • Valves • Controls • Power Units

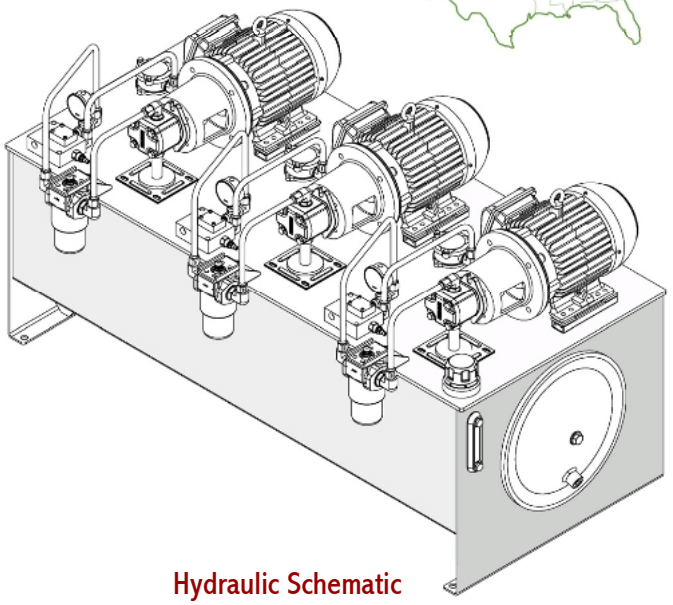
NAHI, LLC MAIN OFFICE – 11549 SUNBELT COURT, BATON ROUGE LA

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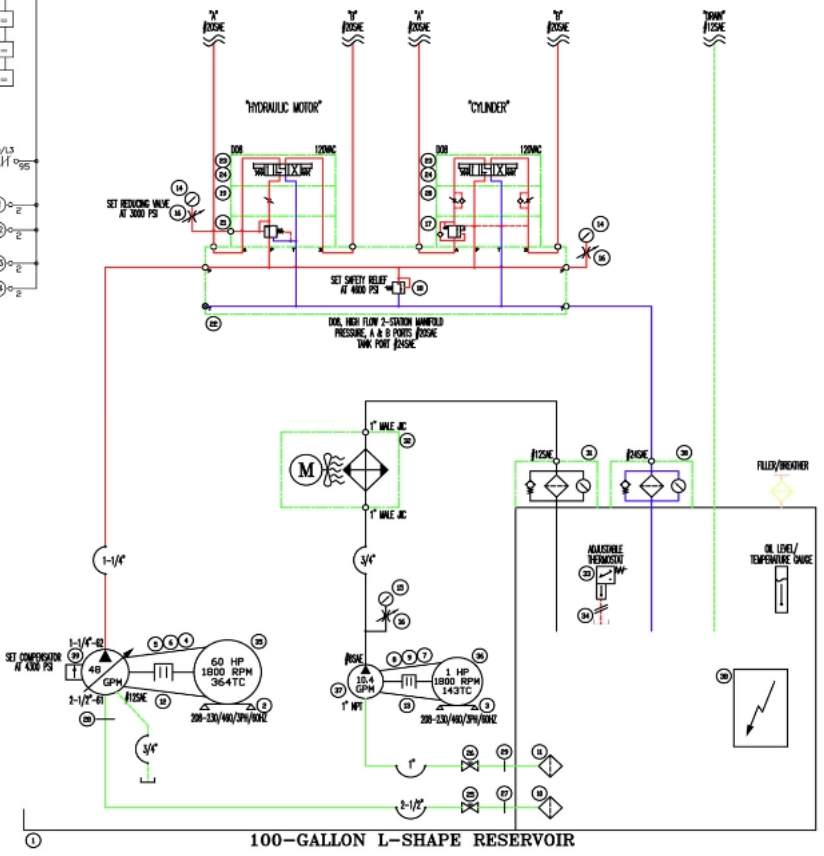
Custom Power Units
Solution Providers

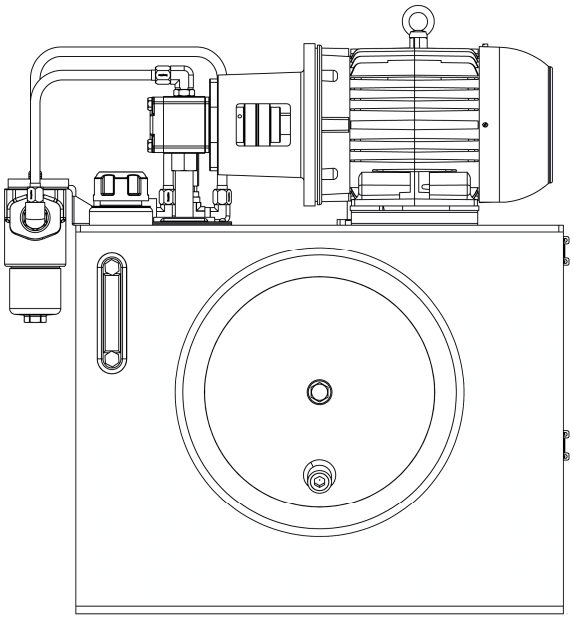
Electrical Schematic





Hydraulic Schematic





Manufactured and Tested By

FLODRAULIC

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NORTH AMERICAN HYDRAULICS

Hydraulic Gear Pumps
Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with GearTek hydraulic gear pumps and motors.

Single, Tandem, or Triples With Piggyback Options

Features and Options:

- Cast iron throughout
- Heavy duty sleeve type bearings
- Double viton@ shaft seals standard
- Pressure compensated thrust plates
- Designed for heavy duty applications
- Various shaft, flange and port options
- Precision gears machined from solid bar stock
- Compatible with most fire resistant fluids
- Contaminant resistant
- Computer designed and manufactured
- Quality certified

Proven Solutions for:

- Mobile Truck
- Construction
- Agricultural
- Road Milling
- Oil Industry
- Gas Industry

Please contact NAHI for additional information

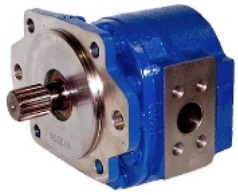
The above information should be used as a guide and is subject to change without notice.

Please contact NAHI for proper selection.

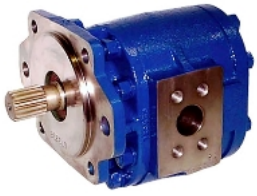
C Series – SAE A or B Mounts



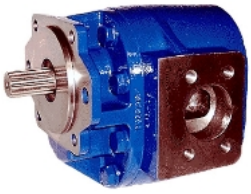
D Series – SAE B or C Mounts



HD Series – SAE B or C Mounts



E Series – SAE C Mounts



F Series – SAE C Mounts



C Series – Hydraulic Gear Single Pumps

Model	Displacement		Max Speed	Maximum Pressure	
	in³	cc	rpm	psi	bar
C45	0.88	14.4	3600	3500	241
C65	1.27	20.8	3600		
C85	1.66	27.2	3400		
C100	1.96	32.1	3300		
C115	2.24	36.7	3100	3000	207
C150	2.93	48.1	2800	2500	172
C180	3.51	57.5	2500	2500*	
C200	3.90	63.9	2200	2500*	

* Application pressures may be limited to shaft type

D and HD Series – Hydraulic Gear Single Pumps

Model		Displacement		Max Speed	Normal Duty Pressure		Severe Duty Pressure	
		in³	cc	rpm	psi	bar	psi	bar
D15	HD15	2.98	48.8	2500	4000	276	3800	262
D20	-	3.97	65.1		3800	262	3000	207
-	HD20	3.97	65.1		4000	276	3800	262
D25	-	4.97	81.4		3000	207	2300	159
-	HD25	4.97	81.4		4000	276	3100	214
D30	-	5.96	97.6		2500	172	2000	138
-	HD30	5.96	97.6		3300	228	2600	179
D35	-	6.95	113.9		2500*	172	2000*	138
-	HD35	6.95	113.9		2900	200	2300	159
D40	-	7.95	130.2		2500*	172	2000*	138
-	HD40	7.95	130.2		2500*	172	2000	138
D45	HD45	8.94	146.5		2500*	172	2000*	138

* Application pressures may be limited to shaft type

E and F Series – Hydraulic Gear Single Pumps

Model		Displacement		Minimum rpm	Maximum rpm	Maximum Pressure	
		in³	cc			psi	bar
E30	-	5.98	98.0	600	2500	4000	276
E35	-	6.93	113.5			4000	276
E40	-	7.90	129.4			4000*	276
E45	F45	8.92	146.2			4000*	276
E50	-	9.86	161.6			3800*	262
-	F50	9.86	161.6			4000*	262
E55	F55	10.86	178.0			3400*	234
E66	-	13.17	215.6			2900*	200
-	F66	13.17	215.9			2900*	200
E77	-	15.20	249.2			2500*	172
-	F77	15.20	249.2			2750*	172
E85	F85	16.79	275.2			2250*	155
E95	-	18.91	309.8			2000*	138

* Application determines pressure

GEARTEK

NORTH AMERICAN HYDRAULICS

Axial Piston Motors
Solution Providers





North American Hydraulics, NAHI, LLC partnering with Geco, Hydrostatically Supported Axial Piston Fixed Displacement Motors.

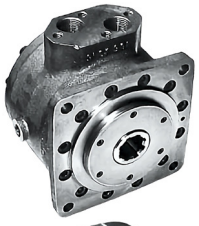
Features and Benefits:

- High Max Speed of Rotation
- Low Minimum Speed of Rotation
- High Transmittable Power
- High Versatility of Employment
- High Division and Torque Reliability
- High Exercise Pressure
- High Maintainable Radial and Axial Loads
- High Volumetric and Mechanical Efficiency

Proven Solutions for:

- Agricultural and Mining
- Heavy Iron and Steel
- Road & Railway
- Industrial Winches and Mixers
- Naval Transmissions
- Rubber Extrusion & Molding













Please contact NAHI for additional information.

The above information should be used as a guide and is subject to change without notice.

Please contact NAHI for proper selection.

Fixed Displacement Motors							
Models		Displacement		Max Speed	Max Working Pressure	Max Peak Pressure	Torque
		in³	cm³	rpm	psi	psi	ft-lbs
SF	050	3.0	49	10-500	1595	2030	72.3
	075	4.5	73	10-500			108.5
	100	6.0	98	10-500			144.6
	125	7.4	122	10-500			188.0
	150	8.9	146	10-500			217.0
	175	10.4	170	10-500			260.4
	200	11.9	195	10-500			289.3
SF	300	18.9	309	10-400	2030	2610	491.8
	350	21.7	355	10-400			571.4
	400	24.5	402	10-400			651.0
	450	27.3	448	10-300			723.3
	500	30.1	494	10-300			795.6
KF	80	5.1	83	5-1000	3045	3625	195.3
	100	6.8	112	5-1000			267.6
	150	8.6	141	5-1000			340.0
	200	13.4	219	2-900			528.0
	300	17.8	292	2-900			701.6
	450	27.1	444	2-800			1070.5
	700	41.4	679	2-700			1642.0
	1100	67.3	1103	1-400			2661.7
	1450	88.4	1448	1-400			3500.8
	2000	119.0	1950	1-300			4716.0
	2500	150.7	2470	1-250			5967.2
	5000	289.9	4750	1-150			11486.0
HF	100	6.3	103	10-2000	4640	6525	376.1
	200	12.5	205	10-1400			759.5
	300	19.8	325	10-1200			1200.7
	450	28.2	462	10-1100			1700.0
	600	35.9	588	10-1000			2170.0
	700	41.0	671	10-950			2438.0
KV	200	13.9	228	2-1000	3045	3625	549.7
	300	18.4	301	2-1000			723.3
	450	26.9	440	2-800			1048.8
	700	41.2	675	2-800			1627.4
	1100	67.3	1103	1-600			2661.7
	1450	88.4	1448	1-500			3500.8
	2000	119.0	1950	1-450			4715.9
	2800	168.1	2755	1-400			6661.6
	5000	290.5	4760	1-300			11486.0

NORTH AMERICAN HYDRAULICS

Electrical Joysticks
Solution Providers





North American Hydraulics, (NAHI, LLC), partnering with GT Controls offering George & Thomas electrical joysticks for various applications.

Features and Benefits:

- High Quality
- Smooth Operations
- Die Cast
- Light Weight
- Rugged
- Small Dimensions
- Custom or Standard Solutions

Proven Solutions for:

- Construction Equipment
- Truck Driven Vehicles
- Utility Machines
- Forestry Applications
- Lifting Equipment
- Agricultural Machines
- Boom Mowers
- Hook Loaders



Joystick SK212 – Mobile Hydraulics	
Electrical functions	Proportional / Analog Digital combined with proportional Center tap (optional) Single, redundant or dual redundant signals
Mechanical functions	Self-centering or friction brake, central locking Rigid, soft or without cross guidance Angle limiter
Technology	Hall effect sensors Adjustable operator present sensors Thumb wheels, push buttons, rocker switches
Dimensions	Mounting depth .78" Ø Housing 2.24" Ø Flange 2.83" Handle height 8.58"
Mounting	4 screws – M5 – Through hole
Operating angle	Up to 25°
Durability	More than 3 Million cycles
Operating voltage	Max 30 V DC
Interfaces	CANopen, J1939, USB
Connection	4-Pin Deutsch Plug, Cable
Temperature range	-22°…+176°F
Protection class	Up to IP67 / NEMA 6





Please contact NAHI for additional information.

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Please contact NAHI for proper selection.

GT Controls

NORTH AMERICAN HYDRAULICS

Variable & Fixed Displacement Axial Piston Pumps & Motors

Solution Providers

- Compact Design
- Low Noise Level
- High Power Density
- High Rotation Speed
- Multiple Pump Assemblies

TPV 1000 Single Pump



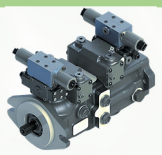
TPV 1300 BTB Tandem Pump



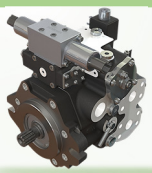
TPV 1500 Single Pump



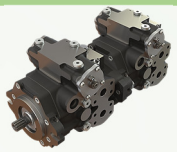
TPVTC 1500 Tandem Pump



TPV 2500 Single Pump



TPVTC 2500 Tandem Pump



TPV 4300 Single Pump



TPVT 4300 Tandem Pump



TPV 5000 Single Pump



TPVT 5000 Tandem Pump



TPV 9000 Single Pump



TMF 600 Motor



TMF 900 Motor



TMV 550 Motor



HANSA-TMP

NORTH AMERICAN HYDRAULICS

Axial Piston Pumps
Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with Hansa-Tmp offering Variable Displacement Closed Loop Axial Piston Pumps.







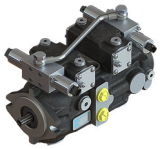
Variable Displacement Closed Loop Axial Piston Pumps

Model	Displacement cm³/n	Rated Pressure psi	Peak Pressure psi	Max Speed rpm	Charge Pump ccm	Shaft Output	Mounting Output	Through Drive Flanges (Input)	Through Drive Shafts (Input)	Wgt S or T lbs
TPV 1000 Single TPV1200 BTB Tandem	6, 8, 9, 11, 12, 13	3,045	4,350	3,600	3.9 4.7 5.4	9T – 16/32DP (SAE A) 11T – 16/32 (SAE AH)	SAE "A" 2B SAE "B" 2B	SAE "A" 2B	9T – 16/32DP (SAE A)	19-S 42-T
	15, 17		4,060							
	18		3,915							
	19, 21	2,900	3,625	3,200						
TPV 1500 Single TPVTC 1500 Tandem	17,18, 19, 21	5,075	5,800	3,600	5.8	13T – 16/32DP (SAE B)	SAE "B" 2B	SAE "A" 2B	9T – 16/32DP (SAE A)	31-S 51-T
TPV 2500 Single TPVT 2500 Tandem	22, 25, 28,31, 38	5,800	6,525	3,600		13T – 16/32DP (SAE B)	SAE "B" 2B	SAE "A" 2B	9T – 16/32DP (SAE A)	55-S 99-T
TPV 4300 Single TPVT 4300 Tandem	32, 38, 45, 50	3,625	5,057	3,600	14.0	15T – 16/32DP (SAE BB)	SAE "B" 2B	SAE "A" 2B SAE "B" 2B	9T – 16/32DP (SAE A) 13T – 16/32DP (SAE B)	51-S 110-T
TPV 5000 Single TPVT 5000 Tandem	46, 50, 64	4,350	5,800	3,600	13.0	13T – 16/32DP (SAE B) 15T – 16/32DP (SAE BB)	SAE "B" 2B	SAE "A" 2B SAE "B" 2B	9T – 16/32DP (SAE A) 13T – 16/32DP (SAE B) 15T – 16/32DP (SAE BB)	64-S 133-T
TPV 9000 Single	55	5,800	6,525	4,000	20.0 28.0	14T – 12/24DP (SAE C) 21T – 16/32DP (SAE CC) 23T – 16/32DP (SAE CC)	SAE "C" 4B	SAE "A" 2B SAE "B" 2B	9T – 16/32DP (SAE A) 13T – 16/32DP (SAE B)	150-S
	72			4,100						
	90			4,000						
	110			3,800						

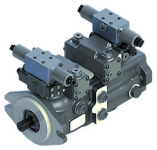
Proven Solutions for:

- Construction Applications
- Utility Machines
- Material Handling Applications
- Agricultural Applications
- Forestry Applications

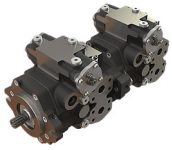

TPV 1000 Single


TPV 1300 BTB Tandem

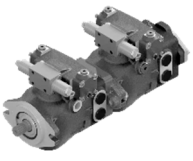

TPV 1500 Single


TPVTC 1500 Tandem


TPV 2500 Single


TPVTC 2500 Tandem


TPV 4300 Single


TPVT 4300 Tandem


TPV 5000 Single


TPVT 5000 Tandem


TPV 9000 Single

HANSA-TMP

Please contact NAHI for additional information.

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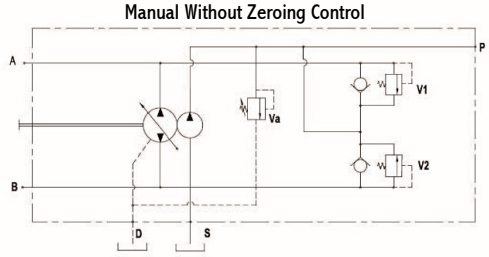
Please contact NAHI for proper selection.

NORTH AMERICAN HYDRAULICS

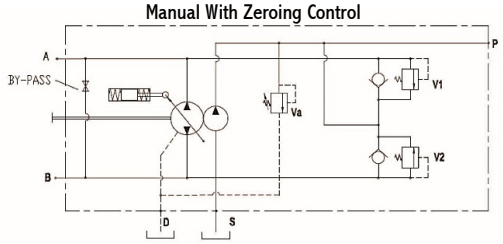
Axial Piston Pumps
Solution Providers



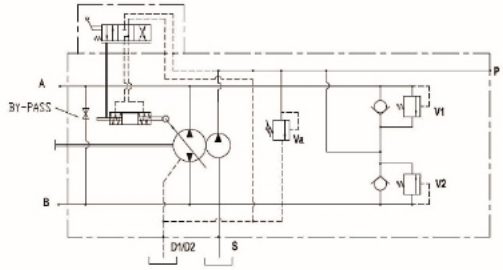
Manual Without Zeroing Control



Manual With Zeroing Control

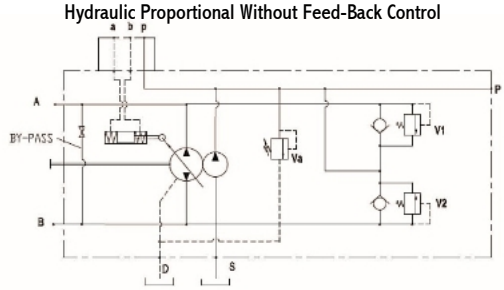


Manual Lever With Feed-Back Control

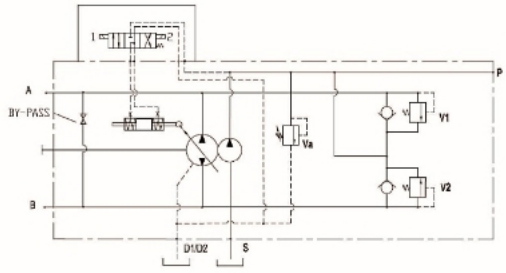


162

Hydraulic Proportional Without Feed-Back Control



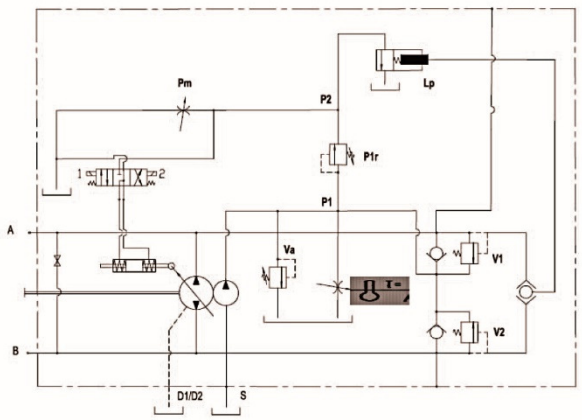
Electric Two Position On-Off



Controls – Options

	1000	1300	1500	2500	4300	5000	9000
CONTROLS							
Direct mechanical (own lever)	▪	▪					
Direct manual lever	▪	▪					
Direct manual level with return to zero	▪	▪					
Manual lever w/feedback			▪	▪	▪	▪	▪
Hydraulic servo-control (proportional)	▪	▪	▪	▪	▪	▪	▪
Hydraulic servo-control w/feedback			▪	▪	▪	▪	▪
Electro servo 12V or 24V (proportional)	▪	▪	▪	▪	▪	▪	
Electro servo 12V or 24V w/feedback			▪	▪	▪		
Electric two position 12V or 24V						▪	▪
Automotive 12V or 24V			▪	▪	▪	▪	
OPTIONS							
Lever bypass A&B	▪			▪			
Purge valve (hot oil shuttle)	▪	▪	▪			▪	
Screw by pass A&B	▪	▪	▪		▪	▪	
Lever by pass and purge (hot oil shuttle)	▪						
Flange SAE A2B to SAE B2B	▪	▪					
Shaft Coupling 9T to 13T	▪	▪					
Viton Seals		▪					▪
Man on board 12V or 24V		▪	▪	▪	▪	▪	▪
Ported for external mounted filter			▪	▪	▪	▪	
On pump charge filter			▪	▪		▪	
Swashplate angle sensor			▪	▪			
Pressure sensor			▪	▪			
RPM sensor			▪	▪			
Displacement adjustments	▪	▪	▪	▪	▪	▪	
Power limiter							
Pressure cut off valve			▪	▪	▪		▪
Hydraulic inching						▪	
Mechanical inching						▪	
Automotive hydraulic			▪		▪	▪	

Automotive Control







HANSA-TMP

NORTH AMERICAN HYDRAULICS

Axial Piston Motors
Solution Providers





North American Hydraulics, (NAHI, LLC), partnering with Hansa-Tmp offering Fixed Displacement and Variable Displacement Axial Piston Motors.

Features and Options:

- Compact Design
- Excellent Weight/Power Ratio
- High Pressure
- High Rotation Speed
- High Starting Torque
- Excellent Volumetric and Mechanical Efficiency
- Long Service Life

Proven Solutions for:

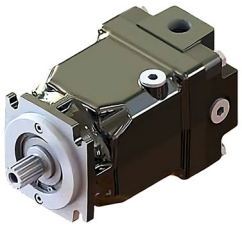
- Construction Applications
- Utility Machines
- Material Handling Applications
- Agricultural Applications
- Forestry Applications



Please contact NAHI for additional information.

The above information should be used as a guide and is subject to change without notice.

Please contact NAHI for proper selection.



TMF 600 - Fixed Displacement Motor

Displacement cm³/n	Rated Pressure psi	Peak Pressure psi	Maximum Speed rpm	Weight lb	Shaft Output	Mounting Output
22, 28	5,075	6,090	4,200	25	0.875"-13T 1.0"-15T 1.0"-Keyed	SAE A2B SAE B2B
35, 40, 46			4,000	39	0.875"-13T 1.0"-15T 1.0"-Keyed	SAE B2B
50		5,945	3,600			
63, 71, 75, 92		6,090	3,500	72	1.25"-14T 1.50"-17T 1.50"-Keyed	SAE C4B
100		5,945	3,240			



TMF 900 - Fixed Displacement Motor

Displacement cm³/n	Rated Pressure psi	Peak Pressure psi	Maximum Speed rpm	Weight lb	Shaft Output	Mounting Output
72	5,800	6,525	4,100	62	1.375"-21T	SAE C4B
90			4,000	75		
110			3,800			



TMV 550 – Variable Displacement Motor

Displacement cm³/n	Rated Pressure psi	Peak Pressure psi	Maximum Speed rpm	Weight lb	Shaft Output	Mounting Output
46 / 23	4,350	5,800	3,600	44	0.875"-13T 1.0"-15T	SAE B2B
50 / 25						
64 / 32						
Note: Controls	Hydraulic servo-control; Electric 12V or 24V					

Other Products Offered by Hansa – Tmp
Variable Displacement Closed Loop Axial Piston Pumps

Compact Design

Low Noise Level

High Power Density

High Rotation Speed

Multiple Pump Assemblies



HANSA-TMP

NAHI, LLC – CUSTOMER SERVICE • 225-751-0500 • www.nahi.com

D220227

NORTH AMERICAN HYDRAULICS

Gear Pumps / Motors
Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with Heavy Motions a global supplier of high-quality hydraulic products for mobile applications.





Gear Pumps								
Heavy Motions Part Number	Cubic Inch	Gear Size	GPM	Max Pressure (psi)	Flange	Shaft	Rear Ports	Side Ports
H21 (Bi-rotational)								
H2B6B14SC21DI	1.97	1"	8.5	3000	2x4 B	7/8 - 13 tooth	1" ORB	Blank
H2B6B14SD21DI	2.46	1-1/4"	10.6	3000	2x4 B	7/8 - 13 tooth	1" ORB	1" ORB
H2B6B14SE21DI	2.95	1-1/2"	12.8	3000	2x4 B	7/8 - 13 tooth	1" ORB	1" ORB
H2B6B14SF21DI	3.44	1-3/4"	14.9	2500	2x4 B	7/8 - 13 tooth	1" ORB	1-1/4" ORB
H2B6B14SG21DI	3.94	2"	17	2500	2x4 B	7/8 - 13 tooth	1" ORB	1-1/4" ORB
H35 (Counter clockwise)								
H35L4B14SF21D1	4.46	1-3/4"	19.4	3000	4 B	7/8 - 13 tooth	1" x 1-1/2" SF	Blank
H51 (Bi-rotational)								
H5B6B14SI10DILB	6.375	2-1/2"	27.8	2500	2x4 B	7/8 - 13 tooth	1-1/4" ORB	Blank
H55 (Bi-rotational)								
H55B4B14SI26DI	6.375	2-1/2"	27.8	2500	4 B	7/8 -13 tooth	1-1/4" ORB	Blank
H7 (Counter clockwise)								
H7L4C20KH20DIDV	9.22	2-1/4"	39.4	2500	4 C	1-1/4" keyed	#12 ORB	1-1/4"x2" SF

Proven Solutions for:

- Mobile Truck
- Construction
- Agricultural
- Road Milling
- Oil Industry
- Gas Industry



H21



H35



H51



H55



H7

Please contact NAHI for additional information.

The above information should be used as a guide and is subject to change without notice.

Please contact NAHI for proper selection

HEAVY MOTIONS

your source for your mobile hydraulic needs

NORTH AMERICAN HYDRAULICS

Remote Controls
Solution Providers

WE'RE NOT JUST CREATING REMOTE CONTROLS, WE'RE CREATING A SAFER WORKPLACE.





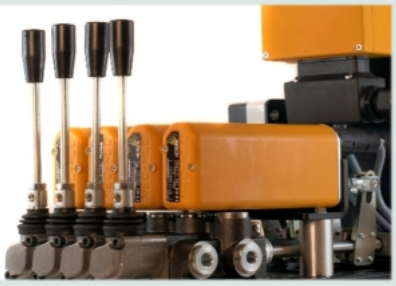
North American Hydraulics, (NAHI, LLC), partnering with Hetronic offering high performance innovative radio remote control systems.

Features and Benefits:

- Exclusive Multiple-Frequency Sharing H-Link (MFSHL) technology developed for automatic frequency management and user configuration of control settings.
- Up to 20 transmitters operated in close proximity sharing the same frequency.
- H-Link provides the ability to change or customize system settings and parameters at a distance and on the fly.

Proven Solutions for:

- Construction / Cranes / Drilling
- Forestry / Agriculture / Mining
- Service Trucks / Concrete Pumps
- Locomotive / Railway / Marine
- Material Handling / Oil & Gas
- Mobile Hydraulics



Please contact NAHI for additional information.

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Transmitters

Belly Packs	Harness Style	One Hand Button	Ergo Series	Ergo Series / MFSHL	H-Touch
Nova-S	Euro	HH-2	Ergo F-21	Pocket MFSHL	H-Touch
Nova-L		HH-1	Ergo S Ergo	Ergo MFSHL	Nova XL 2.8
Nova-XXL	GR Euro	TG Transmitter Mini	GL/GL-3 Transmitter	Ergo F MFSHL	Nova EX Transmitter (Explosion Proof)

Receivers

MFSHL Programmable RX	HL Series RX	RX Series	Serial Communication	Ex Receivers



HETRONIC

NORTH AMERICAN HYDRAULICS

Flow Sharing Load Sensing Valves
Solution Providers





North American Hydraulics, (NAHI, LLC), partnering with Hydro Control, world leaders in the production of hydraulic valves for mobile machinery.

Features and Benefits:

- Quick prompt response rate
- Accurate and stable and not affected by the most diverse operating conditions
- Simultaneous functions never mutually influenced
- Increased energy saving and guaranteed top efficiency levels
- Wide range of available options
- Compact dimensions
- Side by side pre-compensated section with post-compensated section

Proven Solutions for:

- Telehandlers
- Mini-excavators
- Medium and Large Sized Backhoe Loaders
- Forestry Cranes
- Truck Cranes



EX38



EX46



EX54



EX72



Flow Sharing Load Sensing Valves				
GENERAL SPECIFICATIONS	**EX38**	**EX46**	**EX54**	**EX72**
Working section number	1-10	1-10	1-8	1-8
CIRCUIT				
Spool stroke (mm)	7	7	9	11
Spool pitch (mm)	38	46	54	72
RATED FLOW				
Pump flow rate (l/min)	150	220	300	450
A/B port flow rate (l/min) (*)	100	180	250	350
RATED PRESSURE				
Working pressure inlet port P (bar)	350	350	350	350
BACK PRESSURE MAX				
Max pressure outlet port T (bar)	10	10	10	10
(*) with fixed Pump Inlet compensator				
OPTION CHART	**EX38**	**EX46**	**EX54**	**EX72**
LS Signal pressure relief valve	•	•	•	•
Pump pressure relief valve	•	•	•	•
LS Signal dump valve (electric 12/24 Vdc)	•	•	•	•
Pump dump valve (electric 12/24 Vdc)	•	•		
SPOOLS TYPE				
Single acting	•	•	•	•
Double acting	•	•	•	•
Float spool	•	•	•	•
SPOOL ACTUATION				
Hydraulic actuation	•	•	•	•
Mechanical lever actuation	•	•	•	
Mechanical cloche actuation	(•)			
Prop. Electrohydraulic actuation 12-24 Vdc (*)	•	•	•	•
ON/OFF electrohydraulic actuation 12-24 Vdc (*)	•	•	•	•
CAN BUS interface actuation	*1	*1	*1	•
SPOOL RETURN ACTION				
Return spring	•	•	•	•
Mechanical detent	•	•		
Pneumatic control	•	•		
Spools displacement sensor (HLPS)	•	•	•	•
PORT RELIEF VALVE				
Direct operated antishock valve			•	•
Anticavitation valve	•	•	•	•
Pilot operated combined valve			•	•
Direct operated combined valve (fixed setting)	•	•		
Plug	•	•	•	•
*1 in development				
• available				
(•) available on request				
(*) we recommend to keep the T line for the electrohydraulic cartridges separate from the T line of the valve				

Please contact NAHI for additional information

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Please contact NAHI for proper selection.

hydro control

NORTH AMERICAN HYDRAULICS

Monoblock Valve Solution Providers





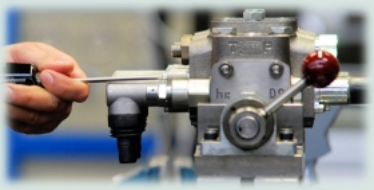
North American Hydraulics, (NAHI, LLC), partnering with Hydro Control, world leaders in the production of hydraulic valves for mobile machinery.

Features and Benefits:

- A large number of options and solutions make the Monoblock Valve a very flexible product:
  - Floating function is possible on the standard body
  - Available direct electric control push-push type
  - Available special circuits for stabilizers applications
  - Fork lift set up with potentiometer and microswitches

Proven Solutions for:

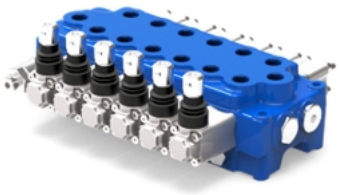
- Cranes and Aerial Platforms
- Agricultural Machines
- Mini Skid Loaders
- Mini Dumpers
- Forklifts



M45



M50



TR55



Monoblock Valves			
GENERAL SPECIFICATIONS	**M45**	**M50**	**TR55**
Working section number	1-6	1-7	1-7
CIRCUIT			
Parallel	•	•	•
Tandem		•	
Parallel circuit stroke (mm)	5	5.5	5
Float spool extra stroke (mm)	4	4.5	4.5
Spools pitch (mm)	35	35	36
RATED FLOW			
Max recommended flow rate (l/min)	45	50	50
Max recommended flow rate (GPM)	12	15	15
RATED PRESSURE			
Max working pressure (bar)	350	350	350
Max working pressure (PSI)	5000	5000	5000
OPTION CHART	**M45**	**M50**	**TR55**
Direct acting pressure relief valve	•	•	•
Clamping valve			(•)
Externally piloted valve	(•)	(•)	
Solenoid dump valve (12 Vdc)	(•)	(•)	
Solenoid dump valve (24 Vdc)	(•)	(•)	
SPOOL ACTUATION			
Manual control	•	•	•
Without lever	•	•	•
90° joystick control	•	•	•
Hydraulic control		•	•
Direct electric control (12-24 Vdc)		•	
SPOOL RETURN ACTION			
Return spring	•	•	•
Detent in A - in B - in A/B	•	•	•
Detent in 4th position	•	•	•
Arrangement for dual control	•	•	•
Hydraulic load limit	•	•	•
Pneumatic control ON - OFF	•	•	•
Proportional pneumatic control	•	•	•
Electrical load limit	•	•	•
Electrohydraulic control ON-OFF (12-24 Vdc)	•	•	•
Electrohydraulic control PROP. (12-24 Vdc)	•	•	•
Electropneumatic control (12-24 Vdc)	•	•	•
AUXILIARY VALVES			
Valves on port		•	•
(•) the application requires special machining in the body			

Please contact NAHI for additional information

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Please contact NAHI for proper selection.

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NORTH AMERICAN HYDRAULICS

Sectional Valves
Solution Providers





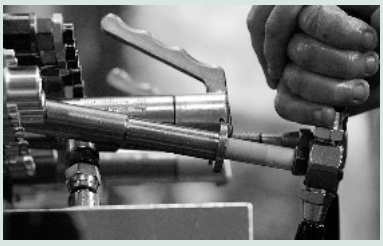
North American Hydraulics, (NAHI, LLC), partnering with Hydro Control, world leaders in the production of hydraulic valves for mobile machinery.

Features and Benefits:

- Ideal for mini-excavators between 1 ton and 2.5 tons. Can be equipped with:
  - A 2 or 3 pumps circuit
  - Flow addition on PTO function
  - Second travel speed
  - Flow addition on the boom
  - Flow addition on the bucket
  - Flow addition on the arm
  - Straight travel
  - Built in boom anti-drift

Proven Solutions for:

- Mini-backhoe loaders
- Mini-excavators
- Skid-steer loaders
- Mini skid loaders
- Mini-dumpers
- Forestry machine



Please contact NAHI for additional information

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Please contact NAHI for proper selection.

D9



Sections Number: 1 – 12
Flow: 10 GPM
Pressure: 5000 PSI
Spool Pitch: 31 mm

D3M



Sections Number: 1 – 12
Flow: 15 GPM
Pressure: 5000 PSI
Spool Pitch: 38 mm

DVS10



Sections Number: 1 – 12
Flow: 12 GPM
Pressure: 5000 PSI
Spool Pitch: 35 mm

D4



Sections Number: 1 – 12
Flow: 22 GPM
Pressure: 5000 PSI
Spool Pitch: 40 mm

D6



Sections Number: 1 – 12
Flow: 27 GPM
Pressure: 5000 PSI
Spool Pitch: 46 mm

D16



Sections Number: 1 – 12
Flow: 40 GPM
Pressure: 5000 PSI
Spool Pitch: 46 mm

D12



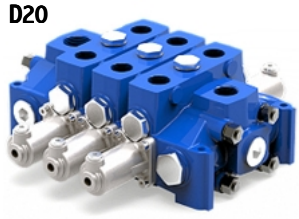
Sections Number: 1 – 12
Flow: 48 GPM
Pressure: 5000 PSI
Spool Pitch: 56 mm

DVS20



Sections Number: 1 – 12
Flow: 67 GPM
Pressure: 5000 PSI
Spool Pitch: 56 mm

D20



Sections Number: 1 – 12
Flow: 67 GPM
Pressure: 5000 PSI
Spool Pitch: 64 mm

D25



Sections Number: 1 – 12
Flow: 100 GPM
Pressure: 5000 PSI
Spool Pitch: 74 mm

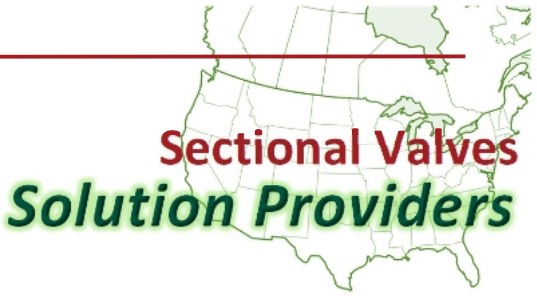
D40



Sections Number: 1 – 10
Flow: 185 GPM
Pressure: 3600 PSI
Spool Pitch: 91 mm

hydro control

NORTH AMERICAN HYDRAULICS



Sectional Valves											
GENERAL SPECIFICATIONS	**D9**	**D3M**	**DVS10**	**D4**	**D6**	**D16**	**D12**	**DVS20**	**D20**	**D25**	**D40**
Working section number	1-12	1-12	1-12	1-12	1-12	1-12	1-12	1-12	1-12	1-12	1-10
CIRCUIT											
Parallel	•	•	•	•	•	•	•	•	•	•	•
Series	•	•	•	•	•	•	•		•	•	
Tandem	•	•	•	•	•	•		•	•		
Parallel circuit stroke (mm)	6	5	6	6	7	7	9.5	9.5	9.5	12	15
Series circuit stroke (mm)	6	5	6	6	5	7	6.5		6.5	8.5	
Float spool extra stroke (mm)	5	5	5	5.5	6	7	7	7	7	9.5	10
Spools pitch (mm)	31	38	35	40	46	46	56	56	64	75	91
RATED FLOW											
Max recommended flow rate (l/min)	35	55	45	80	100	150	180	250	250	380	700
Max recommended flow rate (GPM)	10	15	12	22	27	40	48	67	67	100	185
RATED PRESSURE											
Max working pressure (bar)	350	350	350	350	350	350	350	250	350	350	350
Max working pressure (PSI)	5000	5000	5000	5000	5000	5000	5000	4000	5000	5000	5000
OPTION CHART	**D9**	**D3M**	**DVS10**	**D4**	**D6**	**D16**	**D12**	**DVS20**	**D20**	**D25**	**D40**
Direct acting pressure relief valve	•	•	•	•							
Pilot operated pressure relief valve		•		•	•	•	•	•	•	•	•
2 stage pilot operated relief valve		•		•	•	•	•		•	•	•
Externally piloted valve	•	•	•	•	•	•	•		•	•	•
Solenoid dump valve (12 Vdc)	•	•	•	•	•	•	•				
Solenoid dump valve (24 Vdc)	•	•	•	•	•	•	•				
Main anticavitation check valve		•		•	•	•	•	•	•	•	•
Clamping valve		•	•	•							
SPOOL ACTUATION											
Manual control	•	•	•	•	•	•	•	•	•	•	•
Without lever	•	•	•	•	•	•	•	•	•	•	•
90° joystick control		•	•	•	•	•					
Hydraulic control	•	•	•	•	•	•	•	•	•	•	•
Direct electric control (12-24 Vdc)		•		•							
SPOOL RETURN ACTION											
Spring return	•	•	•	•	•	•	•	•	•	•	•
Detent in A - in B - in A/B	•	•	•	•	•	•	•	•	•	•	•
Detent in 4th position	•	•	•	•	•	•	•	•	•	•	•
Arrangement for dual control	•	•		•	•	•	•		•		
Hydraulic load limit	•	•		•	•	•					
Pneumatic control ON - OFF		•	•	•	•	•	•	•	•		
Proportional pneumatic control		•	•	•	•	•	•	•	•		
Electrical load limit	•	•		•	•	•					
Electrohydraulic control ON-OFF (12-24 Vdc)		•	•	•	•	•	•	•	•		
Electrohydraulic control PROP. (12-24 Vdc)		•	•	•	•	•	•	•	•		
Electropneumatic control (12-24 Vdc)		•	•	•	•	•	•		•		
AUXILIARY VALVES											
Antishock valve	•	•	•	•	•	•	•	•	•	•	•
Anticavitation valve	•	•	•	•	•	•	•	•	•	•	•
Combined valve	•	•	•		•	•	•		•	•	•
Pilot combined valve						•		•	•	•	•

hydro control

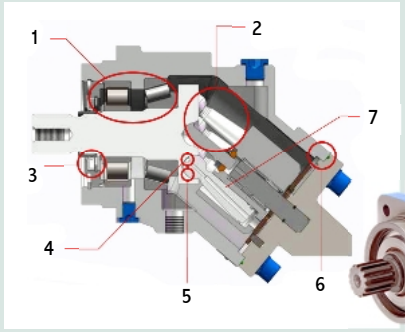
NORTH AMERICAN HYDRAULICS

North American Hydraulics, (NAHI, LLC), partnering with Hydro Leduc hydraulic motors.

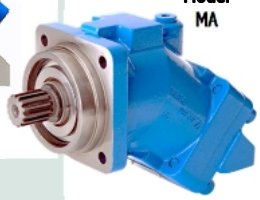




Hydraulic Motors
Solution Providers



Model MA



Features and Options:

1. High performance bearings give longer service life
2. No gears between swashplate and rotating barrel means reduced noise levels
3. Sealing designed specifically to withstand back pressure from the motor return drain circuit
4. Injection of high pressure on piston heads reduces friction, heat and wear
5. Mechanical connection between piston head and motor shaft guarantees no separation (motor cavitation)
6. Design and manufactured with motor barrel and valve plate automatically aligned. Yields longer service life (no mechanical stress)
7. Seven piston design, ensuring excellent operating regularity and constant torque

Model MSI

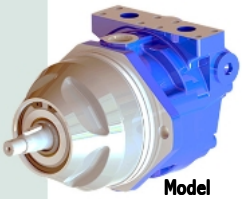


Model MVA SAE



Model MVA ISO





Model MT

Please contact NAHI for additional information

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Please contact NAHI for proper selection.

MA Series – SAE Flanged Bent Axis Fixed Motors

Models	Displacement in³	Displacement cc	Max Speed rpm	Max Pressure psi	Output Flange	Output Shaft
10	0.62	10.2	8800	6525	SAE B2B	7/8"-13T or 1" keyed
12	0.73	12.0	8800			
18	1.10	18.0	8800			
25	1.52	24.9	6900		SAE C4B	1.25"-14T or 1.25" keyed
32	1.96	32.1	6900			
41	2.51	41.1	6200			
45	2.77	45.4	5500			
50	3.07	50.3	5500			
63	3.84	63.0	5500			
80	4.91	80.4	5000			
90	5.49	90.0	5000			
108R	6.61	108.3	4500		SAE D4B	1.75"-13T or 1.75" keyed
125	7.65	125.4	4500			
160	9.76	160.0	4000			
180	11.02	180.6	4000			

MSI Series – Cartridge Bent Axis Fixed Motors

Models	Displacement in³	Displacement cc	Max Speed rpm	Max Pressure psi	Output Flange Pilot	Output Shaft
28	1.69	27.7	6900	6525	Ø135	W30
32	1.96	32.1	6900			
41	2.51	41.1	6200			
50	3.07	50.3	5500		Ø150	W30
63	3.84	63.0	5500			W30/W35
80	4.91	80.4	5000		Ø190	W40/W35
90	5.49	90.0	5000			W40/W35
108	6.61	108.3	4400			W40
108 R	6.61	108.3	4500		Ø200	W40
125	7.65	125.4	4500		Ø200	W45/W40

MV and MVA Series – Variable Displacement Motors

Model	Displacement (min to max) in³	Displacement (min to max) cc	Max Speed rpm	Max Pressure psi	Output Flange Pilot	Output Shaft
85 SAE	1.71 to 5.20	28.1 to 85.2	3900 to 6800	6525	SAE C4B	1.25"-14T
85 ISO*					Ø190	W40
115 SAE	4.82 to 7.05	79.0 to 115.8	3550 to 5600		SAE D4B	1.75"-13T
115 ISO*					Ø200	W40

9-piston design, 3 choices of displacement controls (HPA, H2N, E2N), min & max displacement adjustments.

* Cartridge (Plug In) Version

MT Inline Cartridge Motor

Model	Displacement in³	Displacement cc	Max Speed rpm	Max Pressure psi	Output Flange Pilot	Output Shaft
45	2.75	45.1	4200	300	Ø135	tapered keyed



HYDRO LEDUC *make it simple*

NORTH AMERICAN HYDRAULICS

Pumps
Solution Providers





North American Hydraulics, (NAHI, LLC), partnering with Hydro Leduc hydraulic pumps.

Features and Options:

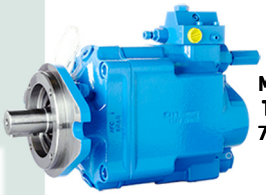
- Compact size
- Pump automatically sets to required direction of rotation
- High mechanical resistant materials
- Reinforced sealing
- Relatively high rotating speeds with seven pistons
- Plate barrel synchronization
- Dual direction of rotation



Model XAi 4B **Model XAi 2B**

Proven Solutions for:

- Material Handling / Construction
- Utility Machines / Agriculture
- Forestry / Marine



Model TXVA 75/92 C2B





Model TXVA 75/92 C4B



Please contact NAHI for additional information

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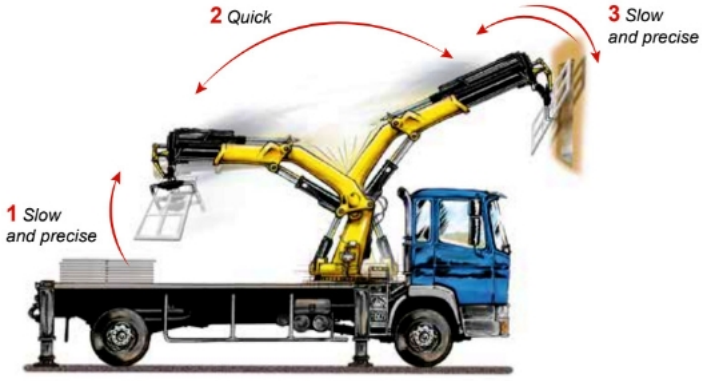
Please contact NAHI for proper selection.

XAi Series Intelligent Pumps – Fixed Displacement Bent Axis Design

Model	Displacement in³	Displacement cc	Rated Pressure psi	Peak Pressure psi	Max Speed rpm	Shaft Output	Mounting Output	Wgt lbs
XAi 18	1.10	18.0	5,510	6,090	2,900	SAE B2B or SAE B4B	7/8"-13T	22.5
XAi 25	1.52	25.0			2,750			
XAi 32	1.95	32.0			2,700			
XAi 41	2.50	41.0			2,550			
XAi 50	3.07	50.3			2,450	SAE B4B	1"-15T	26.0
XAi 63	3.84	63.0			2,300			

TXVA Series Pumps with Load Sensing Control – SAE Version

Model	Displacement in³	Rated Pressure psi	Peak Pressure psi	Max Speed rpm	Shaft Output	Mounting Output	Wgt lbs
TXVA 75	4.60	5,800	6,090	2,000	SAE C2B or SAE C4B	1.25"-14T or 1.25" keyed	59.1
TXVA 92	5.60	5,500	5,800	1,900			



HYDRO LEDUC make it simple

NORTH AMERICAN HYDRAULICS

Hydraulic Rotators
Solution Providers





North American Hydraulics, (NAHI, LLC), partnering with Indexator Rotator Systems, AB who is a world-leader in manufacturing professional duty hydraulic rotators and swivels for demanding applications.

Features and Options:

- Compact and well-protected design
- Extreme torque direct drive vane motor without gearing
- Powerful slew bearings handle radial and axial forces, forced rotation, both positive and negative
- Patented torque transfer for unbeatable long service life
- Quick service due to modular concept

Proven Solutions for:

- Cranes
- General Cargo Handling
- Excavators
- Forwarders
- Scrap Metal Handling
- Recycle Industry
- Timber Handling

Please contact NAHI for additional information on Hydraulic Swivels, Links and Swing Dampers

The above information should be used as a guide and is subject to change without notice.

Please contact NAHI for proper selection.



XR-300-A-LS
XR-300-C-LS
XR-300-LS
XR-300-LS-P-AV
XR-300-T-LS
XR-350-A-LS
XR-350-I-LS
XR-350-LS





XR-400
XR-400-C
XR-400-I
XR-400-P



XR-400-HT-P-AV



XR-400-HT-X2-C-M20
XR-400-HT-X2-C-M24

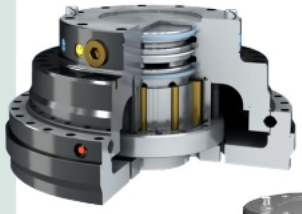


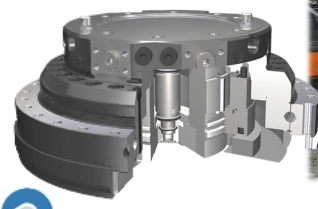
XR-500
XR-500-C



XR-600
XR-600-C





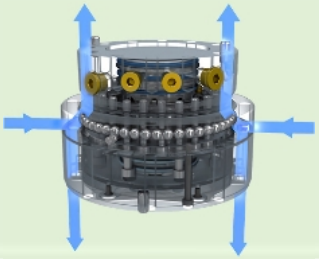


XR Series – Extreme Application Hydraulic Rotator

Type	Part Number	Max Axial Load (Static) lbs	Max Axial Load (Dynamic) lbs	Max Radial Load (Dynamic) lbs
XR-300-A-LS	8300-016	67,500	20,200	15,700
XR-300-C-LS	8300-014			
XR-300-LS	8300-003			
XR-300-LS-P-AV	8300-010			
XR-300-T-LS	8300-006			
XR-350-A-LS	8350-001	112,400	33,700	24,700
XR-350-I-LS	8350-002			
XR-350-LS	8350-000			
XR-400	8400-003	123,600	45,000	31,500
XR-400-C	8400-015			
XR-400-I	8400-009			
XR-400-P	8400-014			
XR-400-HT-P-AV	8400-023			
XR-400-HT-X2-C-M20	8400-025			
XR-400-HT-X2-C-M24	8400-024			
XR-500	8500-000	157,400	56,200	40,500
XR-500-C	8500-001			
XR-600	8600-000	191,100	61,500	45,000
XR-600-C	8600-001			

External Forces are Not Transferred to the Motor or Swivel







Indexator

Heavy-duty rotators
for when the going gets extra tough

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D220414

NORTH AMERICAN HYDRAULICS

XR Rotators

Solution Providers











Indexator® Rotator Systems

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D190522

NORTH AMERICAN HYDRAULICS

Hydraulic Rotators
Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with Indexator Rotator Systems, AB who is a world-leader in manufacturing professional duty hydraulic rotators and swivels for demanding applications.

Features and Options:

- Compact design providing an overall shorter package
- Manufactured using the highest quality materials for higher productivity and overall reliability
- Hydraulically balanced for longer service life
- For use with various types of grapples and attachments

Proven Solutions for:

- Cranes
- General Cargo Handling
- Excavators
- Forwarders
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- Recycle Industry
- Timber Handling

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Please contact NAHI for proper selection.



IR-10-5-M20



IR-10-M16



IR-10-M20



IR-10M-M20



IR-10HT-M16



IR-12



IR-12-A



IR-12-AV



IR-12-L



IR-12-X



IR-12-XA



IR-20-5-M24



IR-20-M20



IR-20-M24



IR-20M-M20



IR-20M-M24



IR-22



IR-22-X



IR-22-X2



IR-25





IR Series – Hydraulic Rotators

Type	Part Number	Max Axial Load (Static) ± lbs	Max Axial Load (Dynamic) ± lbs
IR-10-5-M20	8000-244	56,200	15,700
IR-10-M16	8000-307		
IR-10-M20	8000-309		
IR-10M-M20	8000-308		
IR-10HT-M16	8000-305		
IR-12	8000-614		
IR-12-A	8010-003		
IR-12-AV	8000-265		
IR-12-L	8000-613		
IR-12-X	8000-615		
IR-12-XA	8000-656		
IR-20-5-M24	8000-486	101,100	33,700
IR-20-M20	8000-509		
IR-20-M24	8000-513		
IR-20M-M20	8000-508		
IR-20M-M24	8000-512		
IR-22	8000-714		
IR-22-X	8000-715		
IR-22-X2	8000-755		
IR-25	8000-980	101,100	44,900

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Heavy-duty rotators
for demanding jobs and environments

NORTH AMERICAN HYDRAULICS

IR Rotators



Solution Providers











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Rotator Systems

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D190805

NORTH AMERICAN HYDRAULICS

Hydraulic Rotators
Solution Providers





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Proven Solutions for:

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- General Cargo Handling
- Excavators
- Forwarders
- Scrap Metal Handling
- Recycle Industry
- Timber Handling



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GV3



GV4



GV6



GV12



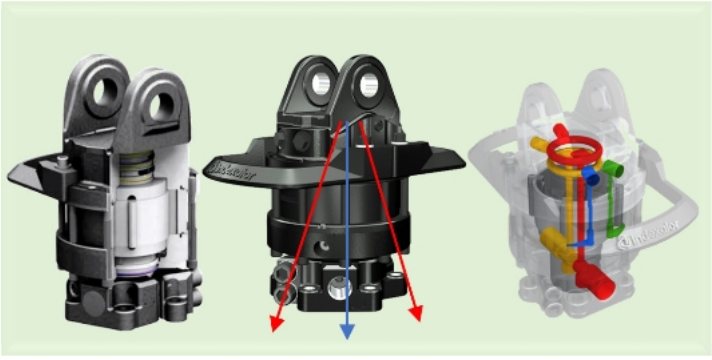
GV14

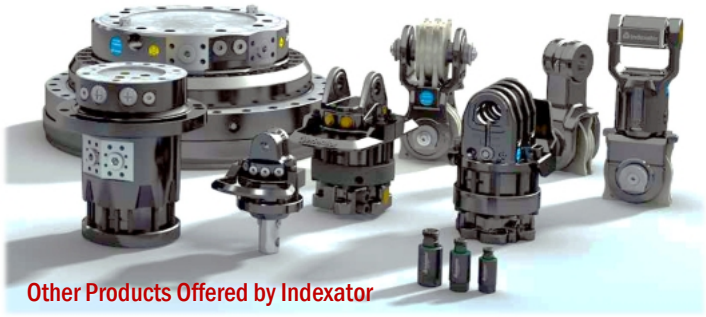


GV17



GV Series – Hydraulic Rotators		
Type	**Max Axial Load (Static) lbs**	**Max Axial Load (Dynamic) lbs**
GV3	6,800	2,810
GV4	10,100	5,620
GV6	13,500	5,620
GV12	22,500	11,240
GV14	22,500	11,240
GV17	36,000	11,240





Other Products Offered by Indexator

Indexator

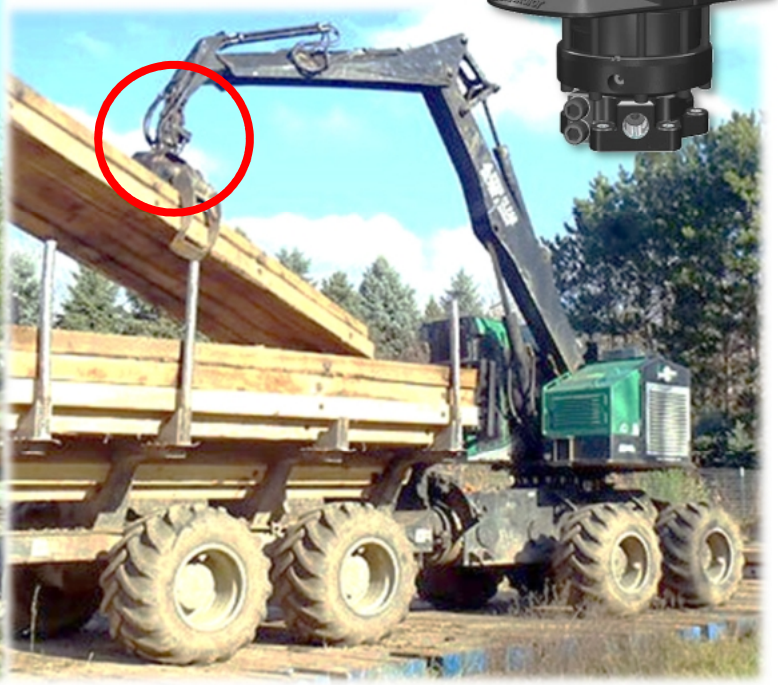
Heavy-duty rotators
for demanding jobs and environments

NORTH AMERICAN HYDRAULICS

GV Rotators

Solution Providers









Indexator® Rotator Systems

NORTH AMERICAN HYDRAULICS

High Performance Hose Swivels
Solution Providers

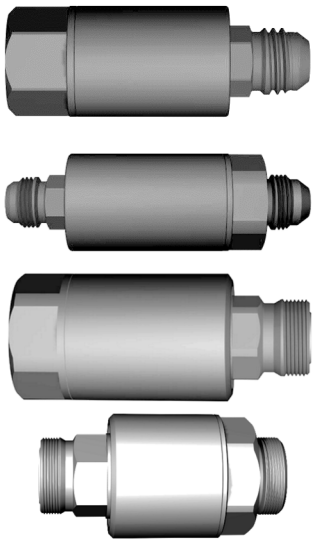
North American Hydraulics, (NAHI, LLC), partnering with Indexator Rotator Systems, AB who is a world-leader in manufacturing professional duty hydraulic rotators and swivels for demanding applications.





Features and Options:

- Free and continuous rotation even at extreme pressure spikes reduces the risk of ruptured hoses
- Handles with no pressure losses high working pressure over long periods
- Extends the service life of hydraulic hoses
- Straighter shorter hoses with more secure hose routing
- High corrosion and wear resistant surface treatment
- Dirt and water-resistant seals



K100 Series – High Performance Hose Swivels

Part Number	Size - JIC	End Female	End Male	Max Work Pressure
9010-057	08 JIC FM	3/4" – 16 UNF	3/4" – 16 UNF	450 bar
9010-058	10 JIC FM	7/8" – 14 UNF	7/8" – 14 UNF	
9010-005	12 JIC FM	1-1/16" – 12 UN	1-1/16" – 12 UN	
9010-006	16 JIC FM	1-5/16" – 12 UN	1-5/16" – 12 UN	
Part Number	**Size - JIC**	**End Male**	**End Male**	**Max Work Pressure**
9010-038	08 JIC MM	3/4" – 16 UNF	3/4" – 16 UNF	450 bar
9010-061	12 JIC MM	1-1/16" – 12 UN	1-1/16" – 12 UN	
9010-062	16 JIC MM	1-5/16" – 12 UN	1-5/16" – 12 UN	
Part Number	**Size - ORFS**	**End Female**	**End Male**	**Max Work Pressure**
9010-007	12 SAE FM	1-3/16" – 12 UN	1-3/16" – 12 UN	450 bar
9010-064	12 SAE FM	1-3/16" – 16 UNF	13/16" – 16 UNF	
9010-008	16 SAE FM	1-7/16" – 12 UN	1-7/16" – 12 UN	400 bar
Part Number	**Size - ORFS**	**End Male**	**End Male**	**Max Work Pressure**
9010-059	12 SAE MM	1-3/16" – 12 UN	1-3/16" – 12 UN	450 bar
9010-063	12 SAE MM	1-3/16" – 16 UNF	1-3/16" – 16 UNF	
9010-060	16 SAE MM	1-7/16" – 12 UN	1-7/16" – 12 UN	400 bar
9010-009	20 SAE MM	1-11/16" – 12 UN	1-11/16" – 12 UN	



Field Serviceable



Proven Solutions for:

- Cranes
- General Cargo Handling
- Excavators

Please contact NAHI for additional information on Rotators, Links and Swing Dampers

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Please contact NAHI for proper selection.





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Heavy-duty swivels
that pay for themselves

NORTH AMERICAN HYDRAULICS

Radial Piston Hydraulic Motor
Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with Italgroup offering Single Displacement Radial Piston Motors (Low Speed High Torque Motors).

HCD













Features and Options:

- High Volumetic and Mechanical Efficiencies
- Smooth Running at Low Speeds
- High Starting and Constant Torque
- High Freewheeling and Cavitation Resistance
- Wide Speed Range
- Compact Design
- Low Maintenance and High Reliability
- Bi-directional
- High Radial and Axial Force
- Speed Sensor Available
- Built-in Valves Available

Proven Solutions for:

- Marine and Offshore Equipment
- Winches / Conveyors
- Steel Bending Machines
- Fork Lift Trucks
- Skid Steer Loaders
- Dumpers
- Agricultural and Forestry Machines
- Municipal Vehicles
- Injection Moulding Machines

Please contact NAHI for additional information.

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Please contact NAHI for proper selection.

HCD Series Motor

Motor		Displacement		Max Speed	Peak Speed	Max Pressure	Max Power	Peak Power
Frame	Size	in³	cc	rpm	rpm	psi	hp	hp
HCD05	40	2.4	40	1500	2000	4350	35	70
	60	3.6	60	1400	1900		50	83
	75	4.5	74				51	
	90	5.5	91	1300	1600		54	
	110	7.0	115					
	130	7.8	129					
	150	9.2	151	1200	1500	4000		
	170	10.1	166					
HCD1	100	5.9	98	1100	1400	4350	70	107
	150	9.4	154				71	
	175	10.5	173					
	200	12.2	200					
	220	13.4	221	1000	1300	4000		
	250	14.8	243	900	1200			
HCD2	200	11.7	193	1250	1500	4350	107	150
	250	15.3	251	1050	1200			
	300	18.6	305	800	1150			
	350	21.2	348	650	4350			
	400	25.8	424	550	900			
	500	30.0	493			4000		
HCD3	350	21.4	352	800	1050	4350	137	190
	400	25.9	426	700	900			
	500	29.6	486	550	850			
	600	36.3	595	500	800			
	700	42.0	689	450		4000		
	800	48.3	792		750			
HCD5	800	51.1	837	580	720	4350	201	281
	1000	64.7	1060	500	700			282
	1200	73.2	1200		650			
	1300	79.8	1308	470	620			
	1500	89.2	1462			4000		
	1600	99.2	1625	420				





Italgroup

NORTH AMERICAN HYDRAULICS

Radial Piston Hydraulic Motor
Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with Italgroup offering Single Displacement Radial Piston Motors (Low Speed High Torque Motors).

Features and Options:

- High Volumetic and Mechanical Efficiencies
- Smooth Running at Low Speeds
- High Starting and Constant Torque
- High Freewheeling and Cavitation Resistance
- Wide Speed Range
- Compact Design
- Low Maintenance and High Reliability
- Bi-directional
- High Radial and Axial Force
- Speed Sensor Available
- Built-in Valves Available

Proven Solutions for:

- Marine and Offshore Equipment
- Winches / Conveyors
- Steel Bending Machines
- Fork Lift Trucks
- Skid Steer Loaders
- Dumpers
- Agricultural and Forestry Machines
- Municipal Vehicles
- Injection Moulding Machines

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HSM

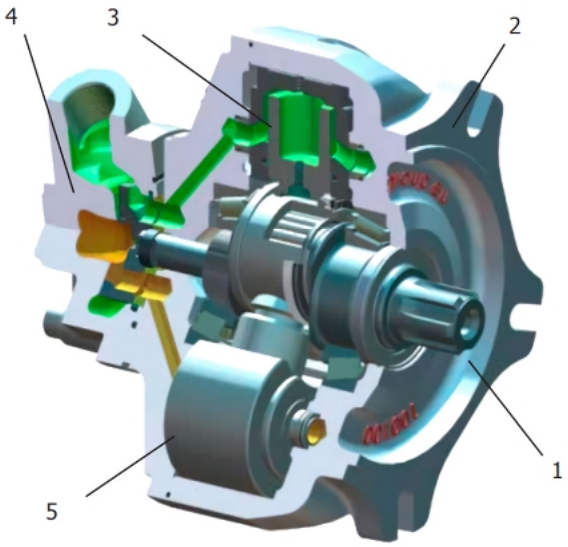


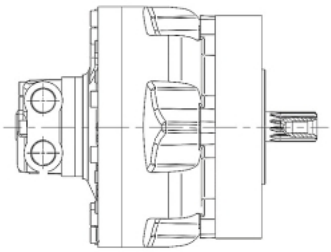
Enhanced Version of HCD Motor

HSM Series Motor								
Motor		Displacement		Max Speed rpm	Peak Speed rpm	Max Pressure psi	Max Power hp	Peak Power hp
Frame	Size	in³	cc					
HSM05	40	2.4	40	1700	2200	4350	44	60
	60	3.6	60	1600	2100			
	75	4.5	74				54	83
	90	5.5	91	1500	1800			
HSM1	100	5.9	98	1400	1700		71	107
	150	9.4	154	1300	1600			
	175	10.5	173					
HSM2	200	11.7	193	1400	1650		107	150
	250	15.3	251	1200	1350			
	300	18.6	305	950	1300			
HSM3	350	21.4	352		1200		131	190
	400	25.9	426	850	1050		137	
	500	29.6	486	650	950			
HSM5	800	51.1	837	700	800		201	282
	1000	64.7	1060	620	780			

HC series motors are radial piston hydraulic motors (generally indicated as LSHT motors, low speed high torque motors) with a rotating shaft (1) and a stationary housing (2). The pistons (3) are located radially and the working fluid provide the mechanical force that push the pistons against the eccentric shaft , providing the shaft ouput torque. The inlet and outlet flow to and from the pistons is regulated by a distributor (4), that provides the oil distribution correct timing. The HC motor design is very compact because the piston and the connecting rod are realized in the same piece, to make this realizable an oscillating cylinder is present (5). Acting in the adequate way (increasing or reducing the oil flow coming from the pump) the motor rotational speed can be increased or reduced. The motor design guarantee extremely high starting torque and high mechanical working efficiency. Respecting the limitation of working parameters (indicated into the technical datasheets) and all recommendations (including fuid recommendations), high motor lifetimes are obtained and very low maintenance requirements are needed.

The HSM version is a special configuration with balanced shaft, in order to erase or reduce to very low values the motor vibration due to the motor rotation at high speeds. In this way the motor can work at higher speeds in a more efficient and less noisy way.





Italgroup

NORTH AMERICAN HYDRAULICS

Single Displacement Radial Piston Motor

Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with Italgroup offering Single Displacement Radial Piston Motors (Low Speed High Torque Motors).

Features and Options:

- High Volumetic and Mechanical Efficiencies
- Smooth Running at Low Speeds
- High Starting and Constant Torque
- Wide Speed Range
- Compact Design
- Low Maintenance and High Reliability
- Bi-directional
- High Radial and Axial Force
- Speed Sensor Available
- Built-in Valves Available

Proven Solutions for:

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- Winches / Conveyors
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- Fork Lift Trucks
- Skid Steer Loaders
- Dumpers
- Agricultural and Forestry Machines
- Municipal Vehicles
- Injection Moulding Machines









HC Series - Single Displacement Hydraulic Motor

Models		Displacement		Max Speed	Continuous Pressure	Peak Pressure	Max Continuous Power
		in³	cc	rpm	psi	psi	hp
HC05	40	2.4	40	1200	3625	5075	21
	60	3.6	60	1200			34
	75	4.5	74	1200			43
	90	5.5	91	1100			43
	110	7.0	115	850			47
	130	7.8	129	850			47
	150	9.2	151	850			47
	175	10.1	166	750			47
	200	11.6	191	750			47
	250	13.7	226	600			47
HC1	100	5.9	98	1100			54
	150	9.4	154	700			54
	175	10.5	173	700			61
	200	12.2	200	600			61
	220	13.4	221	600			65
	250	14.8	243	600			68
	300	17.6	289	550			68
	330	19.2	315	450			68
HC2	200	11.7	193	1200			102
	250	15.3	251	950			
	300	18.6	305	800			
	350	21.2	348	650			
	400	25.8	424	600			
	500	30.0	493	520			
	600	34.5	566	480			
	650	38.0	624	440			
HC3	350	21.4	352	640			111
	400	25.9	426	600			115
	500	29.6	486	500			115
	600	36.3	595	450			115
	700	42.0	689	420			115
	800	48.3	792	400			115
	900	53.2	872	360			115
	1000	60.2	988	310			115
HC5	800	49.3	808	350			136
	1000	63.4	1040	320			
	1200	72.6	1190	320			
	1300	81.7	1340	320			
	1500	89.3	1464	300			
	1600	99.7	1635	280			
	1800	110.8	1816	280			
	2000	122.6	2010	220			





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NORTH AMERICAN HYDRAULICS

Single Displacement Radial Piston Motor
Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with Italgroup offering Single Displacement Radial Piston Motors (Low Speed High Torque Motors).

Features and Options:

- High Volumetic and Mechanical Efficiencies
- Smooth Running at Low Speeds
- High Starting and Constant Torque
- Wide Speed Range
- Compact Design
- Low Maintenance and High Reliability
- Bi-directional
- High Radial and Axial Force
- Speed Sensor Available
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- Dumpers
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- Municipal Vehicles
- Injection Moulding Machines

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R8M Series - Single Displacement Radial Piston Motors

Models		Displacement		Max Speed	Continuous Pressure	Peak Pressure	Torque
		in³	cc	rpm	psi	psi	ft-lbs
R8M H1	80	4.9	80	1050	3625	5075	1.0
	100	6.1	100	1050			1.2
	150	9.6	157	1050			1.8
	175	10.7	176	900			2.1
	195	11.9	195	900			2.3
	200	12.6	207	850			2.4
	250	15.7	257	850			3.0
	300	18.7	307	850			3.6
R8M H2	200	12.1	198	900	3625	5075	2.4
	250	15.4	253	850			3.0
	300	19.2	314	850			3.7
	350	22.1	362	750			4.3
	400	25.9	424	700			5.0
	500	30.0	492	600			5.7
	600	35.6	584	600			6.9
R8M H3	350	21.3	349	700	3625	5075	4.1
	300	24.2	397	680			4.6
	450	27.6	452	680			5.3
	500	30.0	491	680			5.8
	600	36.2	594	630			6.9
	650	40.1	660	580			7.7
	700	43.1	707	500			8.3
	800	48.3	791	450			9.3
R8M H4	700	43.6	714	580	3625	5075	8.4
	800	48.3	792	530			9.3
	850	51.7	847	530			10.0
	900	55.2	904	530			10.6
	1000	60.5	992	400			11.7
	1100	68.1	1116	400			13.1
	1200	72.7	1192	350			14.0
	1250	76.1	1247	300			14.6
	1400	81.3	1332	280			15.6
R8M H45	1100	72.2	1183	400	3625	5075	13.9
	1400	84.0	1376	350			16.2
	1600	100.6	1648	325			19.3
	1800	110.8	1815	300			21.3
R8M H5	1000	66.8	1094	400	3625	5075	12.8
	1200	75.1	1231	350			14.5
	1400	84.0	1376	350			16.2
	1500	93.2	1528	350			17.9
	1600	100.6	1648	340			19.3
	1800	110.8	1815	300			21.3
	2000	124.2	2035	260			23.9
	2200	135.5	2220	240			26.0
R8M H55	2200	130.1	2126	280	3625	5075	24.9
	2500	154.1	2525				29.6
	2800	171.3	2807				33.0
	3000	184.8	3028				35.6



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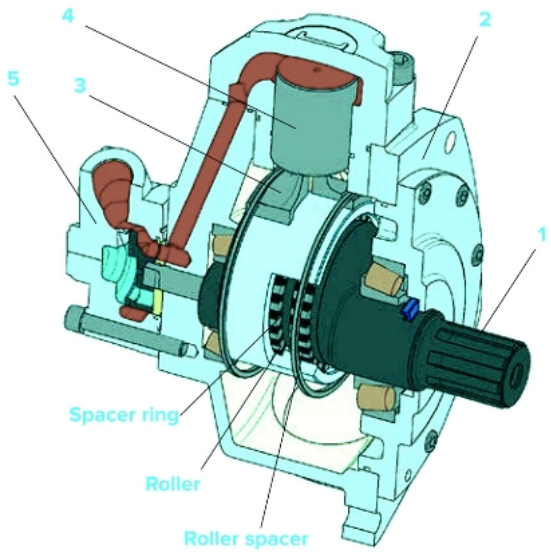
NORTH AMERICAN HYDRAULICS

Single Displacement Radial Piston Motor

Solution Providers

MOTOR DESCRIPTION

R8M series motors are radial piston hydraulic motors (generally indicated as LSHT motors, low speed high torque motors) with a rotating shaft (1) and a stationary housing (2). The pistons (4) are located radially and the working fluid provide the mechanical force that push the pistons against the eccentric shaft, providing the shaft output torque. The inlet and outlet flow to and from the pistons is regulated by a distributor (5) that provides the oil distribution correct timing. The pistons transfer the forces to the eccentric shaft through a connecting rod (3). Acting in the adequate was (increasing or reducing the oil flow coming from the pump) the motor rotational speed can be increased or reduced. The motor design guarantee extremely high starting torque and high mechanical working efficiency. Respecting the limitation of working parameters (indicated in the technical datasheets) and all recommendations (including fluid recommendations), high motor lifetimes are obtained and very low maintenance requirements are needed.



TECHNICAL INNOVATION ON R8M H45, H5, H55, H6 and H7 SERIES

Special bearing construction to prevent from seizure of the connecting rod with the external bushing. This could happen in high speed and high pressure working conditions and could lead to motor breakdown.

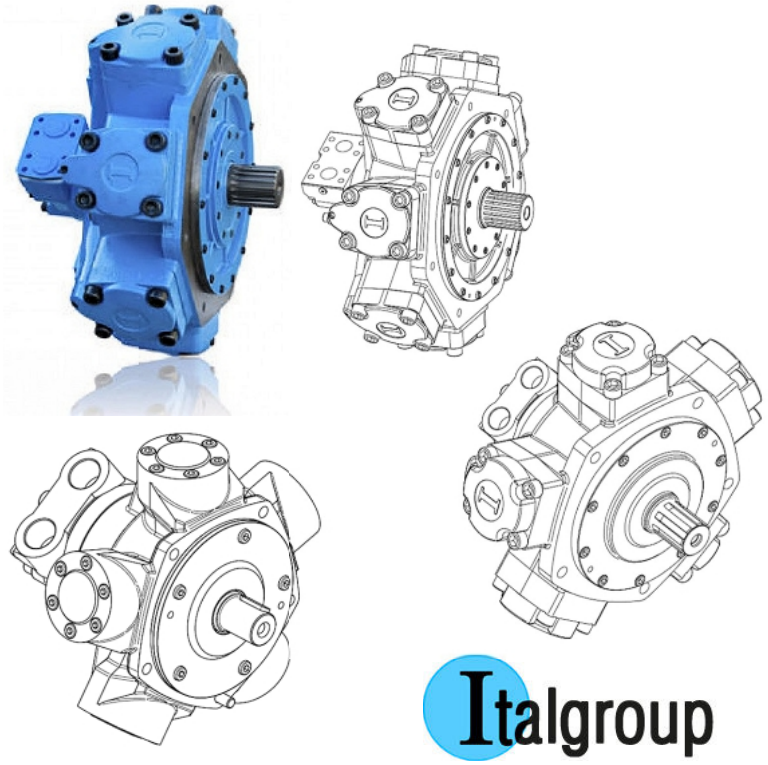
The new bearing design consists of:

-roller spacers, with function of keeping rollers axis parallel creating space between rollers to hold more oil

- spacer rings, with function of keeping rollers lined up absorbing axial forces coming from connection rod

R8M Series - Single Displacement Radial Piston Motors

Models		Displacement		Max Speed	Continuous Pressure	Peak Pressure	Torque
		in³	cc	rpm	psi	psi	ft-lbs
R8M H6	2200	134.6	2206	260	3625	5075	25.9
	2500	154.1	2525	260			29.6
	2800	171.3	2807	260			33.0
	3000	182.0	2983	250			35.0
	3200	200.7	3289	240			38.6
	3500	212.3	3479	240			40.9
R8M H7	3900	238.4	3907	200	3625	5075	45.9
	4300	265.0	4343	190			51.0
	4600	281.7	4616	190			54.2
	5000	310.5	5088	180			59.7
	5400	328.6	5384	170			63.2
R8M H8	6000	364.1	5966	140	3625	5075	70.1
	6500	401.6	6581	140	3625		77.2
	6800	424.8	6962	140	3625		81.7
	7600	465.0	7620	100	2755		89.5
	8000	492.0	8062	90	2610		94.6
R8M H9	7000	430.2	7050	190	3915	5075	82.6
	8000	508.4	8332	160	3915		97.8
	9000	534.4	8757	155	3770		102.8
	10000	623.3	10214	135	3625		119.9
	11000	672.2	11016	120	3625		129.3
	12000	736.7	12073	110	3625		141.8
	13000	794.5	13020	105	3625		152.9



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NORTH AMERICAN HYDRAULICS

Dual Displacement Radial Piston Motor Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with Italgroup offering Dual Displacement Radial Piston Motors (Low Speed High Torque Motors).

Features and Options:

- High Volumetic and Mechanical Efficiencies
- Smooth Running at Low Speeds
- High Starting and Constant Torque
- Wide Speed Range
- Compact Design
- Low Maintenance and High Reliability
- Bi-directional
- Dual Speed
- High Radial and Axial Force
- Freewheeling
- Speed Sensor Available
- Built-in Valves Available

Proven Solutions for:

- Marine and Offshore Equipment
- Winches / Conveyors
- Steel Bending Machines
- Fork Lift Trucks
- Skid Steer Loaders
- Dumpers
- Agricultural and Forestry Machines
- Municipal Vehicles
- Injection Moulding Machines

Please contact NAHI for additional information.

The above information should be used as a guide and is subject to change without notice.

Please contact NAHI for proper selection.









R8C Series - Dual Displacement Radial Piston Motors

Models		Displacement		Max Speed	Continuous Pressure	Peak Pressure	Torque
		in³	cc	rpm	psi	psi	ft-lbs
R8C 195 H1	69	4.2	69	1250	3626	5075	0.8
	75	4.6	75	1250			0.9
	95	5.8	95	1200			1.1
	100	6.1	100	1200			1.2
	125	7.6	125	1150	3915		1.5
	150	9.1	150	1150			1.8
	175	10.7	175	1050			2.1
	195	11.9	195	950			2.3
R8C 250 H1	95	5.8	95	1200	3625	5075	1.1
	100	6.1	100	1200			1.2
	125	7.6	125	1150			1.5
	150	9.2	150	1150			1.8
	175	10.7	175	1050			2.1
	195	11.9	195	950			2.3
	232	14.2	232	920			2.7
	257	15.7	257	920			3.0
R8C 500 H3	98	6.0	98	1000	3625	5075	1.2
	147	9.0	147	900			1.7
	197	12.0	197	800			2.3
	255	15.6	255	750	3915		3.0
	292	17.8	292	700			3.5
	344	21.0	344	700			4.1
	393	24.0	393	680			4.6
	442	27.0	442	650			5.2
	492	30.0	492	600			5.8
R8C 800 H4	165	10.1	165	900	3625	5075	1.9
	245	15.0	245	850			2.9
	273	16.7	273	850			3.2
	328	20.0	328	800			3.8
	410	25.0	410	800	3915		4.8
	493	30.1	493	750			5.8
	575	35.1	575	720			6.8
	660	40.3	660	700			7.7
	792	48.3	792	550			9.3
R8C 1400 H5	0	0	0	1500	3915	5075	0
	82	5.0	82	1200			1.0
	164	10.0	164	800			1.9
	246	15.0	246	800			2.9
	328	20.0	328	800			3.8
	410	25.0	410	800			4.8
	492	30.0	492	700			5.8
	574	35.0	574	700			6.7
	655	40.0	655	700			7.7
	737	45.0	737	650			8.6
	820	50.0	820	600	3915		9.6
	900	54.9	900	600			10.5
	980	59.8	980	600			11.5
	1070	65.3	1070	575			12.5
	1150	70.2	1150	550			13.5
	1235	75.4	1235	550			14.5
	1313	80.1	1313	500			15.4
	1393	85.0	1393	500			16.4
	1499	91.5	1499	500			17.6
	1600	97.6	1600	450			18.1

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NORTH AMERICAN HYDRAULICS

Dual Displacement Radial Piston Motor

Solution Providers

R8C Series - Dual Displacement Radial Piston Motors

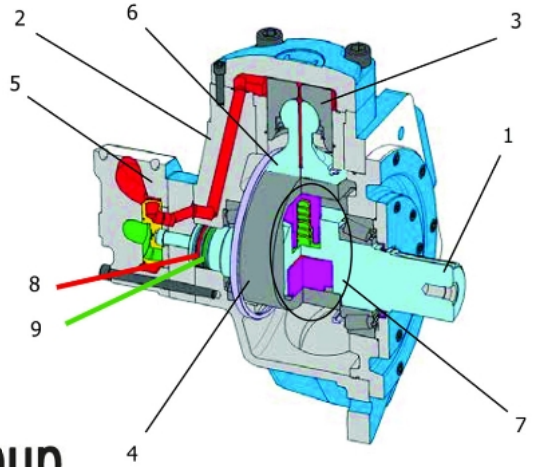
Models		Displacement		Max Speed	Continuous Pressure	Peak Pressure	Torque
		in³	cc	rpm	psi	psi	ft-lbs
R8C 2200 H55	**0**	0	0	1500			0
	82	5.0	82	1200			1.0
	160	9.8	160	800			1.8
	330	20.1	330	800	3625		3.9
	490	30.0	490	720			5.8
	655	40.0	655	720			7.7
	820	50.0	820	700			9.7
	980	59.8	980	700		5075	11.5
	1150	70.2	1150	540			13.5
	1310	80.0	1310	500			15.4
	1470	89.7	1470	470			17.3
	1640	100.1	1640	430	3915		19.3
	1800	110.0	1800	400			21.1
	1970	120.2	1970	360			23.1
	2049	125.0	2049	340			24.0
	2200	134.3	2200	320			25.8
R8C 3000 H6	**0**	0	0	1500			0
	82	5.0	82	1200			1.0
	160	9.8	160	800			1.8
	330	20.1	330	800			3.8
	490	30.0	490	700	3625		5.8
	670	41.0	670	700			7.9
	820	50.0	820	580			9.7
	980	60.0	980	540			11.5
	1150	70.2	1150	500			13.5
	1310	80.0	1310	475			15.4
	1470	90.0	1470	450		5075	17.3
	1640	100.1	1640	420			19.3
	1800	110.0	1800	400			21.2
	1970	120.2	1970	350			23.2
	2130	130.0	2130	340			25.0
	2290	140.0	2290	320	3915		27.0
	2460	150.1	2460	300			29.0
	2620	160.0	2620	300			30.8
	2790	170.3	2790	300			32.7
	2950	180.0	2950	280			34.7
	3085	188.3	3085	280			36.2
R8C 4600 H7	**0**	0	0	1500			0
	82	5.0	82	1200			0
	164	10.0	164	700			1.9
	328	20.0	328	650			3.8
	492	30.0	492	600	3625		5.8
	655	40.0	655	600			7.7
	980	60.0	980	550			11.5
	1310	80.0	1310	530			15.4
	1640	100.1	1640	470		5075	19.3
	1970	120.2	1970	380			23.2
	2290	139.7	2290	330			27.0
	2620	159.9	2620	280			30.8
	2950	180.0	2950	255			34.7
	3280	200.2	3280	230	3915		38.5
	3650	222.7	3650	210			42.9
	4177	254.9	4177	185			49.0
	4617	281.7	4617	170			54.2

R8C Series - Dual Displacement Radial Piston Motors

Models		Displacement		Max Speed	Continuous Pressure	Peak Pressure	Torque
		in³	cc	rpm	psi	psi	ft-lbs
R8C 5400 H7	**0**	0	0	1500			0
	164	10.0	164	1200			1.2
	328	20.0	328	650			3.8
	492	30.0	492	600			5.8
	655	40.0	655	600			7.7
	980	60.0	980	550			11.5
	1311	80.0	1311	530			15.4
	1640	100.1	1640	450			19.3
	2295	140.0	2295	335			27.0
	2620	160.0	2620	290	3625	5075	30.8
	2950	180.0	2950	260			34.7
	3280	200.2	3280	235			38.5
	3650	222.7	3650	210			42.9
	4097	250.0	4097	185			48.1
	4588	280.0	4588	165			53.8
	4915	300.0	4915	155			58.0
	5080	310.0	5080	150			60.0
	5326	325.0	5326	145			62.5

MOTOR DESCRIPTION

R8C series motors are radial piston hydraulic motors (generally indicated as LSHT motors, low speed high torque motors) with a rotating shaft (1) and a stationary housing (2). The pistons (3) are located radially and the working fluid provide the mechanical force that push the pistons against the eccentric cam (4), providing the shaft output torque. The inlet and outlet flow to and from the pistons is regulated by a distributor (5) that provides the oil distribution correct timing. The pistons transfer the forces to the eccentric shaft through a connecting rod (6). Acting in the adequate way (increasing or reducing the oil flow coming from the pump) the motor rotational speed can be increased or reduced. In addition, there is a hydraulic mechanism (7) that controls the motor displacement.



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NORTH AMERICAN HYDRAULICS

Single Displacement Radial Piston Motor

Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with Italgroup offering Heavy Duty Single Displacement Radial Piston Motors (Built with Low Friction Materials and Hydrostatically Balanced).

Features and Options:

- High Volumetic and Mechanical Efficiencies
- Smooth Running at Low Speeds
- High Starting and Constant Torque
- Wide Speed Range
- Compact Design
- Low Maintenance and High Reliability
- Bi-directional
- High Radial and Axial Force
- Speed Sensor Available
- Built-in Valves Available

Proven Solutions for:

- Marine and Offshore Equipment
- Winches / Conveyors
- Steel Bending Machines
- Fork Lift Trucks
- Skid Steer Loaders
- Dumpers
- Agricultural and Forestry Machines
- Municipal Vehicles
- Injection Moulding Machines

Please contact NAHI for additional information.

The above information should be used as a guide and is subject to change without notice.

Please contact NAHI for proper selection.











R8D Series - Single Displacement Radial Piston Motors

Models		Displacement in³	Displacement cc	Max Speed rpm	Continuous Pressure psi	Peak Pressure psi	Torque ft-lbs
R8D H2	300	19.2	314	1100	3915	5075	3.7
R8D H3	350	21.0	342	950	3915	5075	4.0
	400	24.2	397	860			4.6
	450	27.6	452	760			5.3
	500	30.0	491	690			5.8
	600	36.2	594	570			7.0
	700	43.1	707	500			8.2
R8D H4	500	30.1	493	800	3915	5075	5.7
	600	35.6	584	800			6.8
	700	43.5	714	580			8.4
	800	48.3	792	530			9.3
	850	51.7	847	490			9.9
	900	55.1	904	460			10.6
	1000	60.5	992	405			11.6
	1250	76.1	1247	320			14.6
R8D H45	1100	72.1	1182	450	3625	5075	13.9
	1400	84.0	1376	400			16.2
R8D H5	900	57.4	941	600	3915	5075	11.1
	1000	66.8	1094	550	3915		12.8
	1200	75.1	1231	510	3915		14.5
	1400	84.0	1376	472	3915		16.2
	1500	93.2	1528	450	3915		17.9
	1600	100.6	1648	426	3915		19.3
	1800	110.8	1815	391	3625		21.3
	2000	124.1	2034	310	2755		23.9
R8D H55	1800	109.8	1800	290	3915	4640	21.1
	2000	119.7	1962	270	3915		23.0
	2100	124.1	2035	260	3915		23.9
	2150	132.1	2166	260	3915		24.9
	2200	133.8	2193	240	3915		25.7
	2300	139.9	2293	235	3625		26.9
	2400	146.0	2393	220	3625		28.1
R8D H6	1800	113.9	1866	400	3915	5075	21.9
	2000	121.6	1993	400			23.4
	2200	134.6	2206	375			25.9
	2500	154.0	2525	325			29.6
	2800	171.3	2807	290			32.9
	3000	182.0	2983	270			35.0
	3200	200.7	3289	240			38.6
	3500	212.3	3479	230			40.8
R8D H7	3400	208.3	3413	220	3915	5075	40.0
	3600	219.7	3600	210			42.9
	3900	238.4	3907	201			45.9
	4300	265.0	4343	184			51.0
	4600	281.7	4616	173			54.2
	5000	310.5	5088	161			59.7
	5400	328.6	5384	150			63.2
R8D H8	3000	184.3	3020	300	3915	5075	35.5
	6000	364.1	5966	138	3625		70.1
	6500	401.6	6581	138	3625		77.2
	6800	424.8	6962	138	3625		81.7
	7600	465.0	7620	104	2755		89.5
	8000	492.0	8062	92	2610		94.6
R8D H9	7000	430.2	7050	190	3915	5075	82.6
	8000	508.4	8332	160	3915		97.8
	9000	534.4	8757	155	3770		102.8
	10000	623.3	10214	135	3625		119.9
	11000	672.2	11016	120	3625		129.3
	12000	736.7	12073	110	3625		141.7
	13000	794.5	13020	105	3625		152.9

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NORTH AMERICAN HYDRAULICS

High Pressure Hydrostatic Pumps and Motors

Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with Linde Hydraulics offering High Pressure Hydrostatic Pumps and Motors for Closed or Open Loop applications.

Product Advantages:

- Motors – High starting torque, high power density, steady slow speed, compact design, high reliability, long service life
- Model HMV-02 – Large conversion range, zero angle possible, dynamic response, PTO through-drive motor
- Model HMR-02 – Self-regulating motors option available
- Pumps – High power density, dynamic response, noise optimized, precise, compact design, high reliability, long service working life
- Model HPR-02 – Entergy saving operation by "flow on demand" control, excellent suction up to rated speed

Control Options:

- Model HPV-02 – Power limiter, pressure cut-off

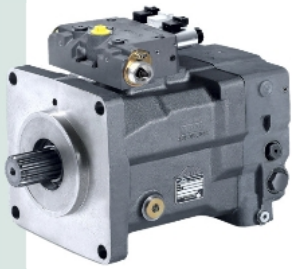
Proven Solutions for:

- Material Handling, Forestry
- Mining, Agriculture, Municipal
- Construction, Marine, Stationary

Please contact NAHI for additional information.

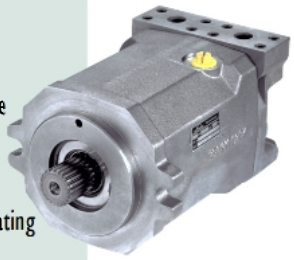
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Please contact NAHI for proper selection.



HPV-02 Closed Loop Pumps

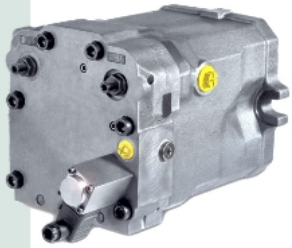
Motor	Displacement		Max Speed	Peak Speed	Max Pressure	Peak Pressure	Max Power	Peak Power	Weight
	in^3	cc	rpm	rpm	psi	psi	Hp	Hp	lbs
55	3.3	54.7	3300	3700	6100	7250	100	164	93
75	4.6	75.9	3100	3500			131	213	104
105	6.4	105.0	2900	3200			170	276	128
135	8.3	135.7	2700	2900			205	331	159
165	10.1	165.6	2500	2700			232	374	209
210	12.8	210.1	2300	2500			270	437	291
280	17.2	281.9	2000	2200			315	511	348



HMF-02/HMA-02 Fixed Motors

Motor	Displacement		Max Speed	Peak Speed	Max Pressure	Peak Pressure	Max Power	Peak Power	Weight
	in^3	cc	rpm	rpm	psi	psi	Hp	Hp	lbs
28	1.7	28.6	4500	4800	6100	7250	73	121	35
35	2.2	35.6					90	150	35
55	3.3	54.7	4100	4400			125	211	42
63	3.8	63.0	3900	4200			137	231	51
75	4.6	75.9	3800	4100			161	271	57
105	6.4	105.0	3500	3800			205	345	73
135	8.2	135.6	3200	3500			243	408	86
*165	8.2-10.0	135-165	3100	3400			287	481	165
*210	10.1-12.8	166-210	2700	3000			316	532	243
*280	12.8-17.1	211-280	2400	2700			378	636	322

*HMA-02 Options



HMV-02 Variable Motors

Motor	Displacement		Max Speed	Peak Speed	Max Pressure	Peak Pressure	Max Power	Peak Power	Weight
	in^3	cc	rpm	rpm	psi	psi	Hp	Hp	lbs
55	3.3	54.7	4100	5300	6100	7250	125	211	62
75	4.6	75.9	3800	5000			161	271	71
105	6.4	105.0	3500	4700			205	345	93
135	8.2	135.6	3200	4000			243	408	123
165	10.1	165.6	3100	3900			287	481	168
210	12.8	210.0	2700	3500			316	532	223
280	17.2	281.9	2400	3200			378	636	322



HPR-02 Open Loop Pumps

Motor	Displacement		*Max Speed	Max Pressure	Peak Pressure	*Max Oil Flow	Max Power	Peak Power	Weight
	in^3	cc	rpm	psi	psi	gpm	Hp	Hp	lbs
55	3.4	55.0	2700	6100	7250	39.2	83	140	86
75	4.6	75.9	2500			50.1	106	178	86
105	6.4	105.0	2350			65.2	138	232	110
135	8.3	135.7	2300			82.4	174	293	143
165	10.1	165.6	2100			91.9	194	326	196
210	12.8	210.1	2000			111.0	235	394	256
105D	12.8	210.0	2350			130.4	276	411	212
280	17.2	281.9	1800			134.0	284	476	364
125D	15.4	252.0	2300	5100	6100	153.1	324	453	249
165D	20.2	331.2	2100	6100	7250	183.7	389	579	390

*Unloaded

Linde HYDRAULICS **Turning Power into Motion.**

NORTH AMERICAN HYDRAULICS

High Pressure Hydrostatic Pumps and Motors

Solution Providers

Controls – Options				
	HPV-02	HMF-02/HMA-02*	HMV-02	HPR-02
CONTROLS				
LP – Load sensing with pressure cut-off				▪
HTL – Load sensing with hydraulic ΔpLS-override				▪
ETL – Load sensing with electrical ΔpLS-override				▪
LEP – Load sensing with electric stroke limiter and pressure cut-off				▪
ETP – Electro-proportional with hyperbolic power limiter and pressure cut-off				▪
TL2 – Load sensing with hyperbolic power limiter				▪
M1R – Mechanical-hydraulic	▪			
H1 – Hydraulic	▪			
E1 – Electro-hydraulic	▪			
E2 – Electro-hydraulic, with switch-off function	▪			
E5 – Electro-hydraulic, 3 position	▪			
CA – Speed related hydraulic mechanical with torque-/power limiter	▪			
$H1^+$ – Hydraulic stepless			▪	
H2 – Hydraulic 2-position			▪	
H4 – Hydraulic stepless v_{min} = 0 cc/rev			▪	
$E1^+$ – Electro-hydraulic stepless			▪	
$E2^+$ – Electro Hydraulic 2-position			▪	
E4 – Electro hydraulic stepless V_{min} = 0 cc/rev			▪	
E6 – As E4 with inverted shifting			▪	
EH1P-CA – Hydraulic stepless with pressure override and electric pressure selection			▪	
DESIGN CHARACTERISTICS	HPV-02	HMF-02/HMA-02*	HMV-02	HPR-02
Axial piston pump in swashplate design for high pressure open circuit systems		▪		▪
Clockwise or counter clockwise rotation	▪			▪
Self-priming at high nominal speed				▪
Tank pressurization or swash angle reduction for high speed applications				▪
Adaptive noise optimization SPU				▪
Decompression fluid is discharged via pump housing to keep suction side calm				▪
Exact and robust load sensing controllers with or without swash plate position feedback				▪
Axial piston pump in swashplate design for high pressure closed circuit systems	▪			
Exact and rugged servo control device (mechanical, hydraulic, electro-hydraulic)	▪			
Integrated low pressure relief valves with charge function	▪			
Replaceable cartridge filter	▪			
SAE high pressure ports	▪			
Through shaft SAE A, B, B-B and C	▪			
Charge pressure pumps for internal and external suction, integrated cold start relief valve optional	▪			
Optional tandem and multiple pumps	▪			
Axial piston motor in swashplate design for high pressure closed and open circuit systems			▪	
Optimized starting and low speed behaviour		▪	▪	
Purge valves for circuit and case flushing optional		▪	▪	
Stepless or 2-position control			▪	
Electric or hydraulic controls			▪	
Superposed pressure control optional			▪	
Brake pressure shut off optional			▪	
Swivelling to 0 cc/rev			▪	
High pressure relief valves available			▪	
Through shaft with free shaft end or with coupling flange			▪	
SAE high pressure ports radial or axial			▪	
SAE mounting flange with ANSI or SAE spline shaft		▪	▪	
Plug-in version optional			▪	
Speed sensor optional			▪	
Double and tandem motor available			▪	
High pressure relief valves set fixed or variable optional		▪		
*Motor set to a fixed, customer specific displacement ex works		▪		

Please contact NAHI for additional information.

The above information should be used as a guide and is subject to change without notice. Please contact NAHI for proper selection.

Linde HYDRAULICS

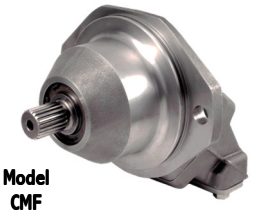
Turning Power into Motion.

NORTH AMERICAN HYDRAULICS

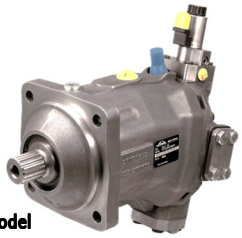
Bent Axis Hydraulic Motors
Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with Linde bent axis hydraulic motors.

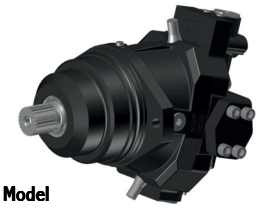
Model CMF SAE



Model CMF Cartridge



Model CMV SAE



Model CMV Cartridge



Features and Options:

- Stepless or two position control
- Electric or hydraulic control
- Override pressure control
- Brake pressure shut off
- Can be set to 0 cm^3/rev
- Double motor or pump available

Benefits:

- Smooth low-speed operation
- High starting torque
- Wide torque/speed range
- Highly dynamic response
- Compact design
- High power density/reliability
- Highest efficiency available

CMF Series – Fixed Displacement Bent Axis Fixed Motors

Model	Displacement in³	Displacement cc	Max Speed rpm	Max Pressure psi	Output Flange	Output Shaft
CMF 80 SAE	4.88	80	5000	7250	SAE C4B	14T or 21T
CMF 80 ISO*					Ø190	W40

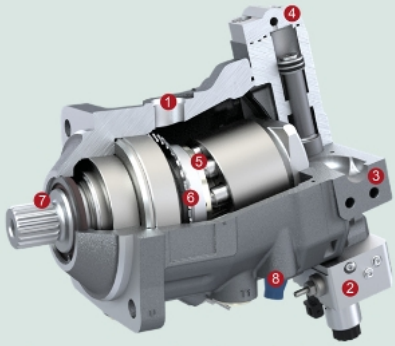
* Cartridge (Plug In) Version

CMV Series – Variable Displacement Bent Axis Motors

Model	Displacement (max) in³	Displacement (max) cc	Max Speed rpm	Max Pressure psi	Output Flange	Output Shaft
CMV 060 SAE	3.66	60	7200	7250	SAE C4B	14T
CMV 060 CT					160-2B	W35
CMV 085 SAE	5.18	85	6800		SAE C2B	17T/21T
CMV 085 CT					190-2B	W40
CMV 115 SAE	7.02	115	6150		SAE D4B	13T/23T
CMV 115 CT					200-2B	W40/W45
CMV 140 SAE	8.54	140	5600		SAE D4B	13T/27T
CMV 140 CT					200-2B	W45
CMV 170 SAE	10.37	170	4900		SAE D4B	13T/15T/27T
CMV 170 CT					200-2B	W45/W50
CMV 215 SAE	13.12	215	4600		SAE E4B	15T
CMV 215 CT					*	W50

CT = Cartridge (Plug In) Version
* = In Development

1. Robust design bent axis motor with high power density - suitable for a wide range of applications
2. High flexibility due to modular concept of various base and override functions (e.g. pressure side selection)
3. High functional reliability due to optimized flow concept - even under adverse operating conditions
4. Asymmetrically damped changeover switch to prevent housing pressure peaks and vibrations
5. Rotating group with variable displacement and high speed capability
6. Sensor for speed and direction of rotation
7. Standardized interfaces for easy replacement without the need of application
8. Thread for mounting of lifting devices enables easy handling



Variable Controls Options

Name	Type
00	Electric, No displacement controller, default position = Vg_{min}, Max controlled = Vg_{min}
E2	Electric, 2-position (negative control, minimum $Vg_{min} = 0$), default position = Vg_{max}, Max controlled = Vg_{min}
E4	Electric, Proportional, default position = Vg_{max}, Max controlled = Vg_{min}, (ΔI = 35 to 90% of IG resolution, negative control, minimum $Vg_{min} = 0$)
E5	Electric, 2-position (positive control, minimum $Vg_{min} = 0$), default position = Vg_{min}, Max controlled = Vg_{max}
E6	Electric, Proportional, default position = Vg_{min}, Max controlled Vg_{max} (ΔI = 35 to 90% of IG resolution, positive control, minimum $Vg_{min} = 0$)
HC	Hydraulic, Proportional, default position = Vg_{max}, Max controlled Vg_{min} (ΔpSt = 4.5 bar resolution, **reference pressure = boost pressure**, negative control, minimum $Vg_{min} = 0.25\ V_{max}$)
H2	Hydraulic, 2-position (reference pressure = case pressure, negative control, minimum $Vg_{min} = 0$) default position Vg_{max}, Max controlled = Vg_{min}
H4	Hydraulic, Proportional (ΔpSt = 6 bar resolution, reference pressure = case pressure, negative control, minimum $Vg_{min} = 0$), default position Vg_{max}, Max controlled = Vg_{min}
H5	Hydraulic, 2-position (reference pressure = case pressure, positive control, minimum $Vg_{min} = 0$) default position Vg_{min}, Max controlled Vg_{max}
H6	Hydraulic, Proportional (ΔpSt = 6 bar resolution, reference pressure = case pressure, positive control, minimum $Vg_{min} = 0$), default position Vg_{min}, Max controlled Vg_{max}

Please contact NAHI for additional information

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Please contact NAHI for proper selection.

Linde HYDRAULICS

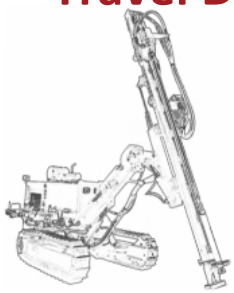
Turning Power into Motion.

NORTH AMERICAN HYDRAULICS

Travel Drive with Integrated Piston Motor

Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with LKC Hydraulic Co., LTD, manufacturer of track and swing drive motors used on track and wheeled machines.







Travel Drives – LKC Travel Motor Series

Models	Low Speed		High Speed		Low Speed cc/rev	High Speed cc/rev	Ratio	Low Speed cc/rev	High Speed cc/rev	Bar	L/min	Special Features	Typical Machine Weight Tons
	Nm	rpm	Nm	rpm									
NTM02PA	1,682	38	802	80	13	6.2	36.96	480.5	229.2	220	18.4	-	1~1.8
NTM02PC												DIS	
NTM03AX	4,041	37	2,682	56	23.2	15.4	48.64	1128.4	749.0	225	42	-	2.5~3.5
NTM03D	2,926	34	1,951	51	18	12		875.4	583.6	210	30		
NTM03DF												DIS	
NTM04C	3,032	44	1,769	76	24	14	37.80	907.2	529.2		40	-	3.5~4.5
NTM06	6,301	31	3,521	55	34	19	47.53	1616.0	903.1	245	50		5~6
NTM06C	8,185	27	4,574	48			55.00	1870.0	1045.0	275		DIS	
NTM07B	10,343	25	5,171	51	44	22	53.71	2363.1	1181.5		60	-	6~8
NTM07K												HSA	
NTM09CA	11,532	33	7,398	52	53	34	45.57	2415.2	1549.3	300	80	-	7~9
NTM09RA	13,591	28	8,719	44			53.71	2846.4	1826.0			DIS	
NTM10	13,783		8,842	43			54.47	2886.8	1851.9				9~11
NTM10AS	14,425	37	10,142	53	64	45		3485.9	2451.0	260	130		9~12
NTM18B	16,955		10,881	57	67	43	53.00	3551.0	2279.0	300		-	10~13
NTM22	24,038	34	15,830	52	82	54	53.70	4403.4	2899.8	343	150	DIS	13~16
NTM40A	47,166	30	24,893	57	180	95	48.00	8640.0	4560.0		260	-	18~22
NTM04VB	3,638	72	2,183	120	45	27	18.47	831.3	498.8	275	60	C-L	3.5~4.5
NTM07VB	10,340	25	5,170	22	44	22	53.71	2363.2	1181.6				6~8

DIS = Manual disengagement.
HSA = Motor displacement will auto shift from min to max while pressure drop between A & B ports over 210 bar. This will happen only when 35 bar shifting pressure applied to PS port.
C-L = Special internal valves designed for closed loop systems with speed sensors included.
NTM03AX not in production. (Targeted NACHI replacements)

Features and Benefits:

- Integrated 2-Speed Axial Piston Motor and Planetary Reducer
- Built-in counter balance valve, parking brake release and high/low shifting in the motor for certain models
- Large transmission ratio, compact design, high efficiency with excellent reliability, stable operation producing low noise

Please contact NAHI for additional information

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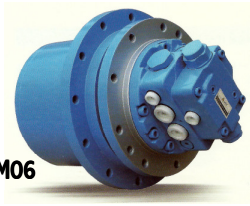
Please contact NAHI for proper selection.



NTM02
NTM03



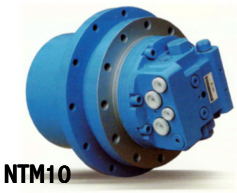
NTM04



NTM06



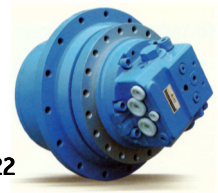
NTM07
NTM09



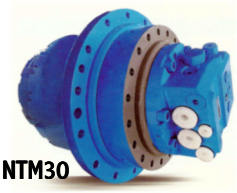
NTM10



NTM18



NTM22



NTM30



NTM40

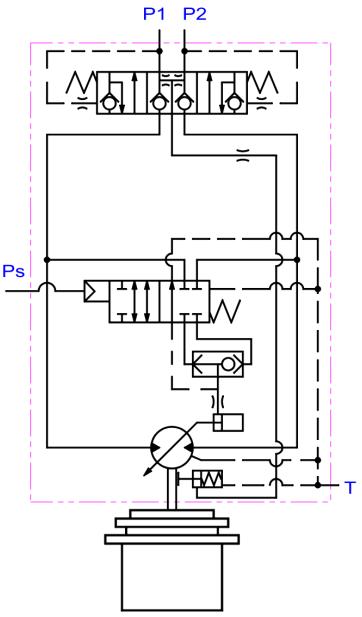


LKC HYDRAULIC

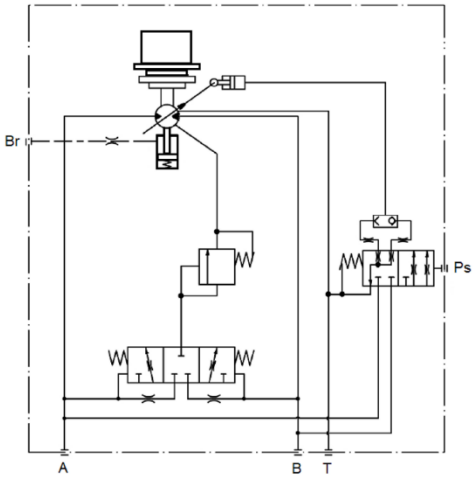
NORTH AMERICAN HYDRAULICS

Travel Drive with Integrated Piston Motor

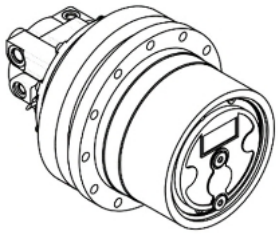


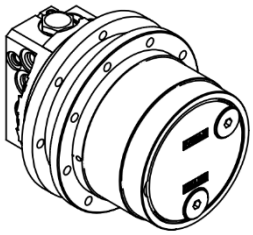


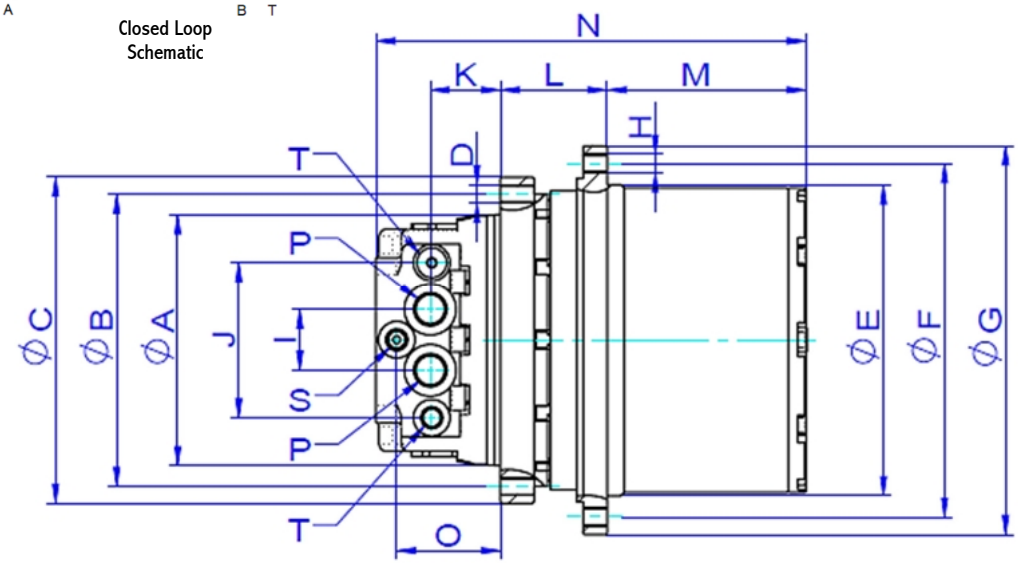
Open Loop Schematic



Closed Loop Schematic







Models	ØA	ØB	ØC	D	ØE	ØF	ØG	H	I	J	K	L	M	N	O	P1 & P2	Ps	T
NTM02PA	140	155	175	8-M10	140	155	175	9-M10	32	86	43	45	83	196	58.5	G3/8"	G1/8"	
NTM02PC																		
NTM03AX	165	192	213	12-M12 (18Pat)	190	212	235	12-M12 (18Pat)	40	102	52	50	114	253	75	G1/2"	G1/4"	G1/4"
NTM03D			215	18-M12		212/215	238	9/9-M12										
NTM03DF																		
NTM04C			214	12-M12	204	232	255	12-M12			45	70	131	282	68			
NTM06	180	220	246	12-M14 (18Pat)	230	262	288	12-M14			48	75	149.5	342	87.5			
NTM06C	200	240	266	9-M14								68	159.5	344.5	74			
NTM07B	210	250	244	12-M14	250	282	306		50	105	78		156	355	110			G3/8"
NTM07K																		
NTM09CA			268	12-M16	265	300	326				76	80	149	350	99.5			
NTM09RA																		
NTM10			280								73		170	365	95			
NTM10AS																		
NTM18B	246	280	308	20-M16	324	364	394	15-M16		116	87	100	156	390	118	G3/4"		G1/2"
NTM22							395				77.5	99.5	182	406				
NTM40A	300	340	370	30-M16	402	440	470	30-M16 (44Pat)	108	N/A	130	98.5	269.5	542.5	110	G1"		

Models	ØA	ØB	ØC	D	ØE	ØF	ØG	H	I	J	K	L	M	N	O	A & B	Ps	T	Br
NTM04VB	210	244	268	12-M16	220	255	280	12-M16	N/A	N/A	81	85	136	345.5	104.5	12SAE	6SAE	8SAE	6SAE
NTM07VB				12-M14	250	282	306	12-M14			84.5	68	157	39	108				

NORTH AMERICAN HYDRAULICS

Planetary Drive with Integral Motor

Solution Providers





North American Hydraulics, (NAHI, LLC), partnering with NACHI in power transmission solutions for compact construction machinery applications.

Features and Benefits:

- All required components are integrated
  - Planetary gearbox
  - Hydraulic motor
  - Parking brake
  - Counterbalance valve
  - Relief valve
- High efficiency axial piston motor maintains high efficiencies at high pressure reducing engine stall and enables better machine maneuverability
- Two-speed function
- Auto kick down



Proven Solutions for:

- Track
- Wheel
- Winch

Please contact NAHI for additional information.

The above information should be used as a guide and is subject to change without notice.

Please contact NAHI for proper selection.



PHV Series – Travel Motor

Model	Available Gear Ratio	Available Hyd. Motor Displacement (Lo/Hi mode) in^3/rev	Output Torque (Low mode)		Motor Input Speed (Hi mode) in^3/rev
			Intermittent lbf-in	Continuous lbf-in	
PHV-1B	25.26:1 36.96:1	.58/.29 .67/.34 .70/.35 .76/.38	13,363	6,681	3000
PHV-2B	31.00:1 39.00:1	.98/.51 .98/.56 1.05/.52 1.05/.58	23,186	11,593	3000
PHV-3B	36.51:1 45.20:1	1.26/.67 1.31/.79 1.44/.73 1.44/.79 1.44/.96 1.53/.87	35,407	18,204	3500
PHV-4B	36.80:1 47.53:1	1.75/1.06 1.81/1.12 2.09/1.17 2.15/1.30	61,000	30,504	3500
PHV-5B	64.25:1	2.58/1.32	83,000	41,500	3500
PHV-6B	In Development				
Parking Brake Available					
Torque should be approx 85% of value					

Other Products Offered by NACHI



NACHI

NORTH AMERICAN HYDRAULICS

Mobile Piston Pumps
Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with NACHI in Mobile Piston Pumps for compact construction machinery applications.



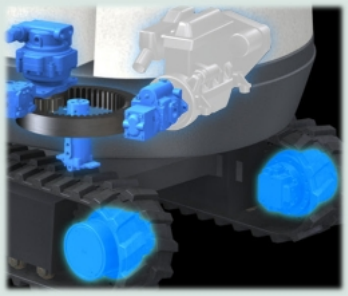


Features and Benefits:

- Model PVS Series:
  - Low noise
  - Low pulsation
  - Load sensing control
  - Tandem pump control
- Model PVD Series:
  - One pump discharges two equal amounts of flow to ensure shovel straightness
  - Constant horsepower control with full use of engine horsepower, resulting in increased speed and power for the mother machine

Proven Solutions for:

- Construction Equipment



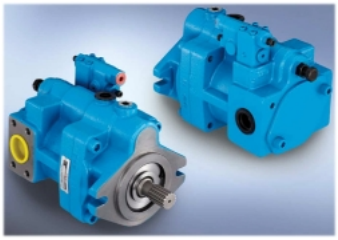
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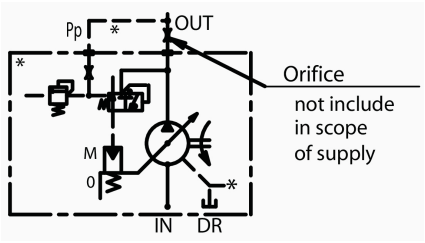
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Please contact NAHI for proper selection.

PVS Series – Variable Displacement Piston Pumps

Model	Maximum Displacement cm³/rev	Maximum Pressure psi	Maximum Speed rpm	Rated Speed rpm	Minimum Speed rpm	Primary Shaft	Primary Mounting Flange	Weight lbs	Rotation
PVS-0B-8	8	3626	2340	2000	500	9T-0.625"	"A"2B	17	RH
PVS-1B-16	16.5							23	RH
PVS-1B-22	22							23	RH
PVS-2B-35	35					11T-0.75"	"B"2B	46	RH
PVS-2B-45	45					15T-1.00"	"B"2B	46	LH

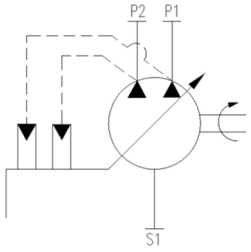




PVD Series – Split Flow Piston Pumps

Model	Maximum Displacement cm³/rev	Maximum Pressure psi	Maximum Speed rpm	Rated Speed rpm	Minimum Speed rpm	Primary Shaft	Primary Mounting Flange	Weight lbs	Rotation
PVD-00B	8x2	3550	2800	2600	900	13T-7/8"	"B"2B	20	RH
PVD-0B	12x2		2800	2600				28	RH
PVD-1B	17x2		2700	2500				33	RH
PVD-2B	22.5x2		2600	2400				44	RH
PVD-3B	33x2		2400	2200		15T-1.00"	"C"2B	59	RH





NACHI

NORTH AMERICAN HYDRAULICS

Radial Piston Motors
Solution Providers





North American Hydraulics, (NAHI, LLC), partnering with Rotary Power (SMA) heavy duty, radial piston, eccentric configuration motors. The efficient design includes a hardened high tensile steel crankshaft supported on hydrostatic and taper roller bearings.

The SMA can withstand both high mechanical and high hydraulic shock loads offering excellent life and continuous high power use. Speed and power ratings are significantly higher than stand high torque low speed (HTLS) motors.

Features and Benefits:

- Freewheel capabilities
- Displacements available from 12.6in³ – 1000in³
- Continuous pressure of 5075psi
- Suitable for use with most hydraulic fluids
- Withstands high peak pressures
- Minimal no-load pressure drop even at high speed
- High power options
- Two speed options

Proven Solutions for:

- Construction
- Recycling & Municipal Vehicles
- Agriculture & Forestry
- Mining & Bulk Material Handling
- Marine & Offshore
- Oil & Gas

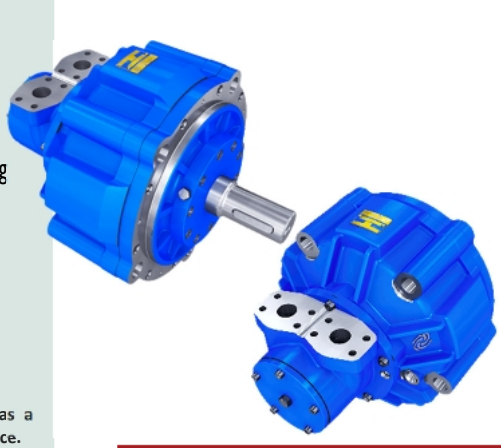
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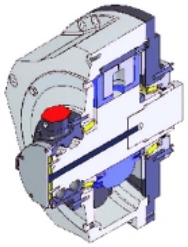
Please contact NAHI for proper selection.

SMA Radial Piston Motor

SMA	Displacement in³	Displacement cc	Max Speed (rpm) Standard	Max Speed (rpm) High Power	Max Pressure psi	Max Power (hp) Standard	Max Power (hp) High Power
SMA0480	12.6	206	480	1,000	6,500	37	72
	17.6	288				53	101
	20.6	337				64	119
	22.6	370				64	119
	29.3	480				91	169
SMA0500	30.5	500	430	700	6,500	81	138
SMA1230*	46.1	755	380	620	6,500	112	183
	52.2	855	350	620		127	203
	60.7	995	350	600		134	250
	70.8	1160	283	580		166	262
SMA2200*	81.8	1340	320	565	6,500	167	296
	97.7	1601	300	565		188	354
	135.9	2227	216	406		261	354
SMA3200	122.2	2002	285	380	6,500	221	298
	152.9	2505	285			248	373
	170.9	2800	260			268	402
	192.1	3148	240			318	478
SMA4350	213.8	3503	---	350	6,500	---	480
	265.3	4347	---	240		---	536
SMA6250	305.7	5009	---	210	6,500	---	603
	381.3	6248	---	190		---	737
SMA8700*	427.7	7008	---	240	6,500	---	658
	530.7	8696	---			---	817
SMA10L	450.4	7380	---	180	6,500	---	594
	537.7	8811	---	150		---	708
	640.6	10497	---	125		---	884
SMA16L	793.3	13000	---	125	6,500	---	1,100
	1000.7	16398	---			---	1,206
Note:	** 2-Speed option available on some models (inquire within)* *All torque values are theoretical at max pressure with no inefficiencies* *--- Not Available*						







ROTARY POWER

NORTH AMERICAN HYDRAULICS

Radial Piston Motors
Solution Providers

DESCRIPTION OF OPERATION

The motor function is achieved by five pistons carried radially in a cylinder block mounted on an eccentric on the driveshaft. Hydraulic fluid under pressure is fed to each piston in turn from axial galleries in the crankshaft through a timing slot in the eccentric. The pistons are supported by flat reaction pads inside the motor case. Pressurising the pistons produces a turning moment on the eccentric by direct hydraulic pressure, thus eliminating connecting rods or other mechanical linkage between piston and crankshaft and the resultant losses associated with such components. Each piston is supported at the reaction pad end by a hydrostatic bearing and is free to float sideways to accommodate the orbiting action of the cylinder block. Correct location of the cylinder block relative to the reaction pads is maintained by a coupling. The crankshaft is supported on large taper roller bearings capable of accepting both radial and axial external loads. Fluid is fed to and from the crankshaft galleries through a rotating distributor system at the non-drive end of the shaft.

FREE-WHEEL ABILITY

The ability to free-wheel is an inherent feature of the SMA range. Only hydraulic system pressure retains the pistons against their respective pads; therefore if the motor is isolated from the rest of the system the piston sleeves are free to retract, thus allowing the cylinder block to orbit without pumping fluid and consequently with negligible resistance. Piston retraction is achieved by pressurising the motor case. Drive is re-engaged by opening the hydraulic supply to the motor, when the pistons resume their normal working position against their respective pads. During this process the large hydrostatic bearing surface has a dampening effect, preventing harsh contact between each piston and its pad.

MULTIPLE DISPLACEMENT OPTION

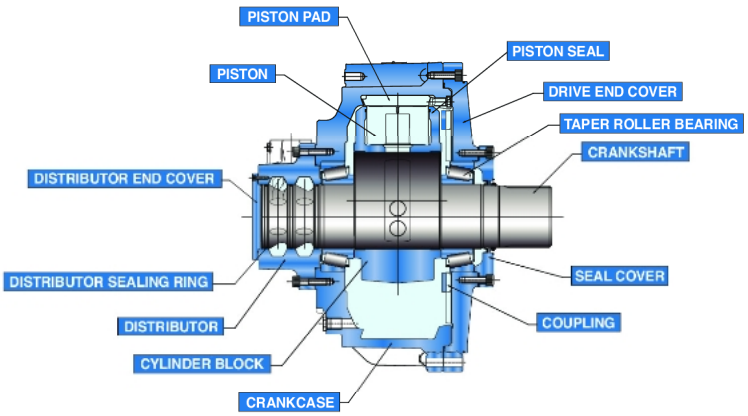
Multiple displacements are achieved as follows:

'C' Configuration:
By separating the bore and wall areas of the pistons, so they can be pressurised simultaneously or independently. Pressurising the full area gives maximum torque and displacement, whilst pressurising the wall or bore areas gives intermediate and minimum displacements respectively.

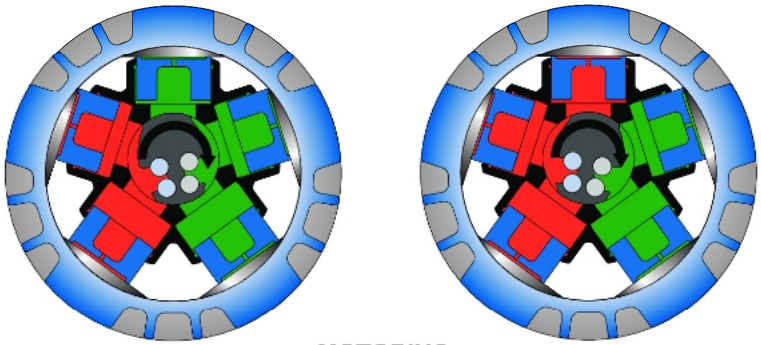
'T' Configuration:
By separating each bank of this double-bank motor, so each bank can be pressurised simultaneously or independently. Pressurising both banks gives maximum torque and displacement, whilst pressurising only one bank gives minimum displacements respectively.

In each case, flow is directed to individual displacement areas through dual galleries in the crankshaft, via an integral pilot-operated selector valve, mounted on the distributor housing. This valve ensures that the non-pressurised area remains full of hydraulic fluid, thus allowing displacement to be changed while the motor is turning, under load.

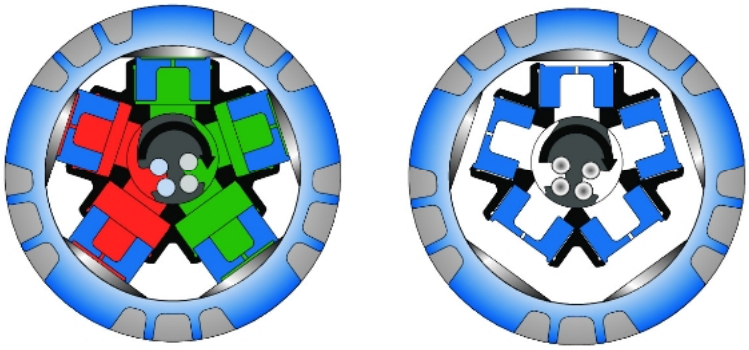
COMPONENT IDENTIFICATION



High pressure ■ **Low pressure** ■



MOTORING



MOTORING FREEWHEEL

NORTH AMERICAN HYDRAULICS

Radial Piston Motors
Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with Rotary Power XF Series Radial Piston CAM Motors.





Features and Benefits:

- Modular, Compact, Customizable, CAM Motor
- Radial piston, multi-stroke CAM design
- Displacement 150cc to 1362cc
- Maximum Pressure 6090 psi
- Radial or axial port options
- Compact design with three output styles
- Freewheel capability

Proven Solutions for:

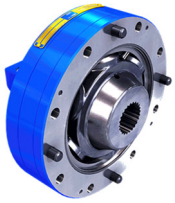
- Construction
- Recycling & Municipal Vehicles
- Agriculture & Forestry
- Mining & Bulk Material Handling
- Marine & Offshore
- Oil & Gas



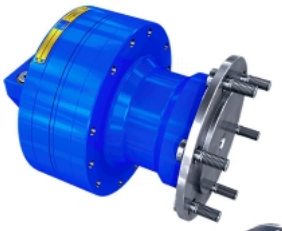
Please contact NAHI for additional information.

The above information should be used as a guide and is subject to change without notice.

Please contact NAHI for proper selection.



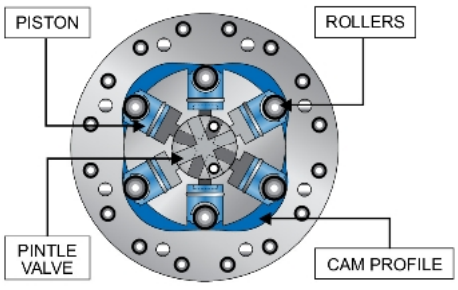






XF Series - Radial Piston Motor						
XF		Displacement		Max Speed	Max Pressure	Max Power
		in³	cc	rpm	psi	hp
XF02	150	9.1	150	550	6090	24.1
	200	12.2	200	500		
	280	17.1	280	390		
	340	20.7	340	320		
XF04	300	18.3	300	375		38.9
	350	21.3	350	262		42.9
	400	24.4	400	250		46.9
	480	29.3	480	222		48.3
	560	34.2	561	195		48.3
	620	37.8	620	178		48.3
	680	41.5	680	160		48.3
XF05	390	24.0	393	440		40.2
	490	30.1	493	350		
	560	34.1	559	320		
	680	41.5	681	260		
XF10	780	47.9	785	230		80.4
	880	54.0	886	200		
	980	60.1	986	180		
	1050	64.2	1052	170		
	1120	68.1	1117	160		
	1240	75.6	1239	145		
	1360	83.1	1362	132		





Oil is fed under pressure through the valve and into the cylinders. The pistons attempt to move outwards. The rollers react on the incline of the cam profile and this action produces rotation of the cylinder block.

Each piston completes four strokes per revolution of the motor. The symmetrical arrangement balances hydraulic forces, eliminating the need for bearings.

NORTH AMERICAN HYDRAULICS

Radial Piston Motors
Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with Rotary Power XJ Series Radial Piston Motors.

Features and Benefits:

- Modular, Compact, Customizable, CAM Motor
- Radial piston, multi-stroke operation
- Displacement 260cc to 5010cc
- Maximum Pressure 5076 psi
- 2-speed option
- Parking brake option
- Freewheel capability
- Multiple mounting arrangements
- Shaft up vent port option
- Wheel and shaft output options
- Heavy duty dirt excluder

Proven Solutions for:

- Construction
- Recycling & Municipal Vehicles
- Agriculture & Forestry
- Mining & Bulk Material Handling
- Marine & Offshore
- Oil & Gas



Please contact NAHI for additional information.

The above information should be used as a guide and is subject to change without notice.

Please contact NAHI for proper selection.







XJ05



XJ05



XJ20



XJ20



XJ40



XJ40

XJ Series - Radial Piston Motor								
XJ	Full Displacement		Max Speed	Max Power	2nd Displacement		Max Speed	Max Power
	in^3	cc	rpm	hp	in^3	cc	rpm	hp
XJ05	15.9	260.0	300	38.9	7.9	130.0	330	25.5
	22.8	373.0	250		11.4	186.5	310	
	25.9	424.0	230		12.9	212.0	280	
	28.8	472.0	210		14.4	236.0	260	
	31.7	519.0	200		15.8	259.5	240	
	34.5	565.0	180		17.2	282.5	220	
XJ20	101.7	1666.0	125	93.9	50.8	833.0	150	63.0
	115.0	1884.0	115		57.5	942.0	135	
	127.7	2092.0	100		63.8	1046.0	125	
	140.0	2301.0	90		70.2	1150.0	110	
	152.9	2505.0	85		76.4	1252.0	100	
XJ40	203.3	3332.0	100	147.5	101.7	1666.0	125	97.9
	229.9	3768.0	90		115.0	1884.0	115	
	255.3	4184.0	85		127.6	2092.0	110	
	280.8	4602.0	80		140.4	2301.0	100	
	305.7	5010.0	70		152.8	2504.0	85	
Note:	Maximum Pressure 5076 psi							

ROTARY POWER

NORTH AMERICAN HYDRAULICS

Hydraulic Motors and Planetary Gearboxes

Solution Providers



North American Hydraulics, (NAHI, LLC), service partnering with Rollstar hydraulic motors and planetary gearboxes.

Features and Options:

- Modular hydraulic motors and planetary gearboxes produced in series on the most modern machines and in large quantities for a torque range of 1,500 Nm to 6,500,000 Nm
- A large number of design variants for the input and output side, providing a solution to virtually all applications
- Extensive stocks and standard spare parts can therefore be available within 72 hours at every international airport

The name Rollstar stands for Swiss quality and reliability in the area of gearbox manufacturing.

Ever since 1966, the year the company was founded, Rollstar has enjoyed a global reputation as a reliable, expert partner for all drive technology applications.



Please contact NAHI for service.

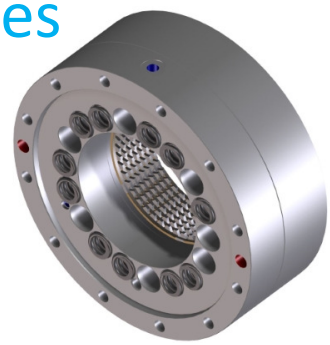
Gearboxes



Motors



Brakes











rollstar

NORTH AMERICAN HYDRAULICS

Hydraulic Rotators
Solution Providers







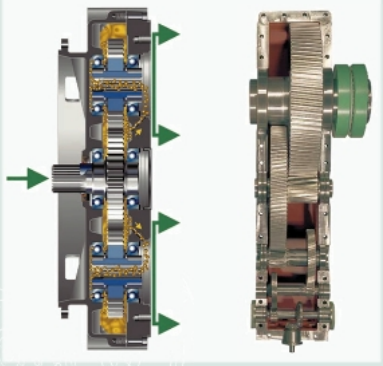
North American Hydraulics, (NAHI, LLC), partnering with Stiebel offering high quality and efficient pump drives.

Features and Benefits:

- Includes a Forced Feed Lubrication system with a ribbed housing eliminating the need for extra cooling in most applications
- All pump drives feature Viton seals with replaceable hardened running rings
- Includes a Nitrated steel gear profile preventing galling and premature shaft wear
- Designed to operate with high elastic engine couplings

Proven Solutions for:

- Construction and Mining
- Agriculture and Forestry
- Marine
- Utility Machines



Pump Drive Ratio listed as a decimal number
Ratio = Input Speed/Output Speed
Ratio < 1 = Speed Increase
Ratio > 1 = Speed Reduction

Please contact NAHI for additional information.

The above information should be used as a guide and is subject to change without notice. Please contact NAHI for proper selection.

P2000 Pump Drives

Size		XXS	XS	S	M	L	XL	XXL	
Centerline distance input/output (in)		4.43	5.1	5.79	6.61	7.99	9.25	15.07	
1 Pad	**Type**					**4381**			
	Engine HP					375			
	Torque lb-ft					1106			
	Max Speed RPM					3000			
2 Pad	**Type**	**4504**	**4355**	**4363/4360**	**4370**	**4380**	**4390**	**4331**	
	Engine HP	259	348	429	536	710	938	1206	
	Torque lb-ft	590	612	811	1106	1696	2434	3540	
	Max Speed RPM	4000	3800	3500	3500	3000	2800	2500	
3 Pad	**Type**			**4362**	**4372**	**4382/4383**	**4392/4396**	**4332**	**4517**
	Engine HP			430	536	710	938	1206	1206
	Torque lb-ft			811	1106	1696	2434	3540	3540
	Max Speed RPM			3500	3500	3000	2800	2500	2500
4 Pad	**Type**					**4384/4399**	**4394**	**4325**	**4525**
	Engine HP					711	939	1206	1005
	Torque lb-ft					1696	2434	3540	2780
	Max Speed RPM					3000	2800	2500	2500
Per Output	Engine HP	154	174	234	281	375	482	617	563
	Torque lb-ft	251	302	442	590	922	1291	1807	1556
	Ratios From – To	.50 - .94	.68 – 1.47	.65 – 1.55	.60 – 1.53	.66 – 1.52	.66 – 1.51	.67 – 1.49	
	SAE Pump Mount	A/B/C	A/B/C	A/B/C	B/C/D	B/C/D/E	Contact NAHI	Contact NAHI	
Per Input	SAE Engine Mount	3	3	2/3	1/2/3	1/2/3 and w/o Flange	SAE 0/1/2 and w/o Flange	SAE 0/1 and w/o Flange	
	Shaft DIN 5480	W40 x 2	W50 x 2	W50 x 2	W50 x 2	W50 x 2	W60 x 2	W70 x 2 & W60 x 2	

P2000 Pump Drive







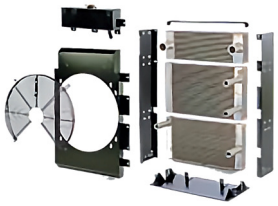
P3000 Pump Drive

P3000 Pump Drives

Size		M	M	Size		M	M
Centerline distance input/output (in)		6.61	6.61	Centerline distance input/output (in)		6.61	6.61
2 Pad	**Type**	**4371**	**4375**	3 Pad	**Type**	**4373**	**4374**
	Engine HP	536	536		Engine HP	536	536
	Torque lb-ft	1107	1107		Torque lb-ft	1107	1107
	Max Speed RPM	3500	3500		Max Speed RPM	3500	3500
Per Output	Engine HP	280	280	Per Output	Engine HP	280	280
	Torque lb-ft	590	590		Torque lb-ft	590	590
	Ratios From – To	.655 - .959	.655 - .959		Ratios From – To	.655 - .959	.655 - .959
	SAE Pump Mount	A/B/C/D	A/B/C/D		SAE Pump Mount	A/B/C	A/B/C
Per Input	SAE Engine Mount	1/2/3	1/2/3	Per Input	SAE Engine Mount	2/3	2/3
	Shaft DIN 5480	W50 x 2	W50 x 2		Shaft DIN 5480	W50 x 2	W50 x 2

STIEBEL®
DIE TREIBENDE KRAFT

NORTH AMERICAN HYDRAULICS



Heat Exchangers
Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with Thermal Transfer Products offering the design and manufacturing of highly engineered heat transfer products.

Features and Options:

- Mobile Cooling Solutions – Offer oil cooler, radiators, and charge air cooler with or without electric DC fans and Hydraulic fan motor drives. Built from brazed aluminum or copper round tube and fin, and are available in standard or custom designed OE modules.
- Industrial Cooling Solutions – Offer air cooled oil coolers built with or without electric AC motors, water cooled shell and tube coolers designed for multiple fluid types and built from aluminum, copper and steel for fluid power related applications.

Proven Solutions for:

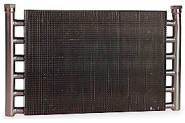
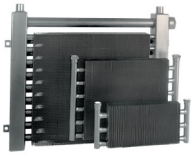
- Agriculture / Forestry
- Construction / Material Handling
- Mining / Specialty
- Off-Highway / On-Highway
- Oil & Gas / Wind Energy
- Hydraulic Presses & Power Units

Please contact NAHI for additional information.

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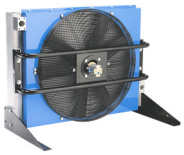
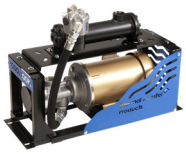
Please contact NAHI for proper selection.

Mobile Cooling

MA	DH	M	DF
			
MF	**AOC**	**AOVHM**	**Turnkey Module**
			

New Technology – Axial Fans with Brushless DC Electric Motors offering benefits for extended life including low current draw on start-up, custom fan speed control and lower ambient noise.

Industrial Cooling

BOL	AOL	COL	EK	COLW
				
CA	**OCA**	**BP**	**PF**	**PVR**
				

New Technology

Cool Loop COLW Series – Water cooled offline fluid conditioning system. Utilizes a high efficiency EK series shell & tube heat exchanger.

Bypass Valves – Factory installed integrated relief valve and a temperature controlled bypass valve with integrated pressure relief.

BP Series – Rugged, compact, cost-effective and reliable over long period of time with minimal maintenance.

PF Series – Compact, serviceable design and flexible cost saving alternative.

HC Series – Shell and tube heat exchangers with the "Hybrid" design based on interchangeability between previous TTP C-Series and Basco Type 500 units.

We COOL what you POWER

Thermal Transfer Products
An API Heat Transfer Company

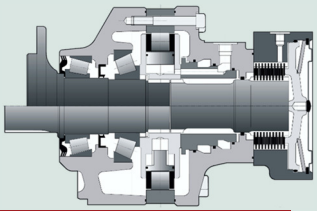
NORTH AMERICAN HYDRAULICS

Poclain Interchanges
Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with Thoth TMS Modular Hydraulic Motors.

Features and Benefits:

- Comfortable steering due to no load reaction
- Manual operation mode
- Continuous operation at low control torque
- Different function and pressure level valves available



TMS03



TMS05



Thoth TMS Radial Piston Hydraulic Motors

Type	Size	Displacement cm³		Pressure bar		Max Speed	Max Power	Ports SAE			
		Full	Half	Cont	Peak	rpm	kW	A+B	Y	T	Br
TMS03	160	160	80	250	400	250	16	10	8	6	6
	225	225	113	250	400	250					
	255	255	127	250	400	250					
	280	280	140	250	400	250					
	325	325	162	250	350	200					
	365	365	182	250	350	200					
	400	400	200	250	350	200					
TMS05	380	376	188	250	400	200	25	12	8	8	6
	470	468	234	250	400	200					
	520	514	257	250	400	200					
	560	580	280	250	400	200					
	620	625	3125	250	350	190					
	680	688	344	250	350	180					
	750	750	375	250	350	160					
	820	820	410	250	350	140					

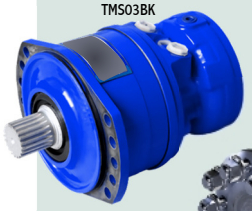
Output Shaft Options

Type	Version	Spline or Keyed	Nominal	Z
TMS03	K10	NF E22-141	Ø40	22
	K40	DIN 5480	Ø50	24
TMS05	K10	NF E22-141	Ø50	28
	K40	DIN 5480	Ø55	17
	P10	Keyed	Ø50	-

Brake Specifications

Type	Static Torque Nm	Dynamic Torque Nm	Residual Parking Nm	Minimum Release Pressure Bar	Maximum Release Pressure Bar
TMS03-Z02	1400	910	1050	12	30
TMS03-Z03	2500	1625	1875		
TMS05-Z04	3060	1990	2295		
TMS05-Z05			2995		

TMS03BK



TMS05BK



Models with Brake

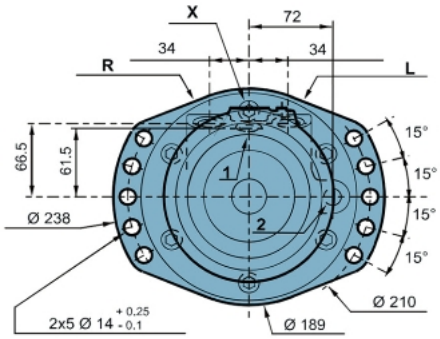
THOTH

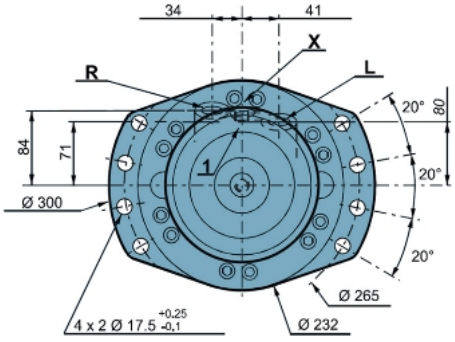
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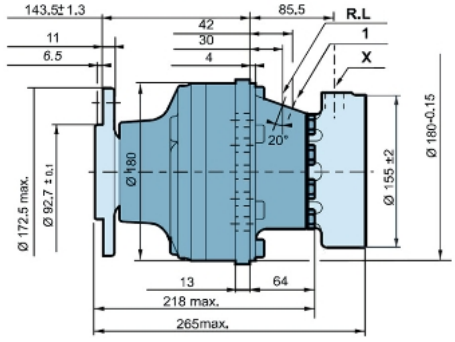
ziHYD®

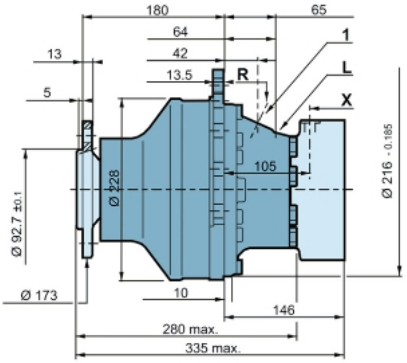
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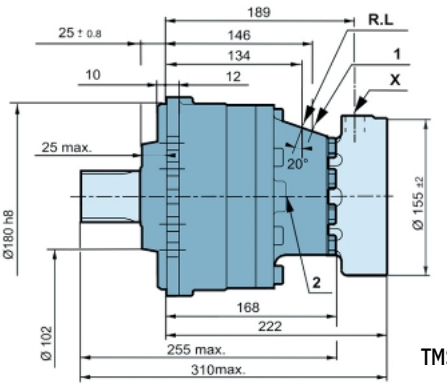
Please contact NAHI for proper selection.

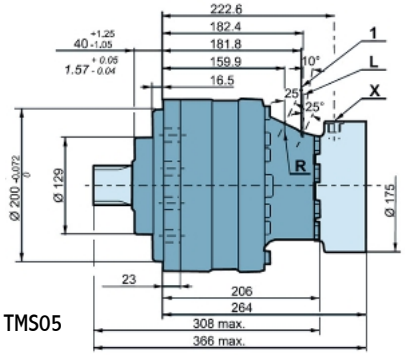












TMS03

TMS05

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D220125

NORTH AMERICAN HYDRAULICS

North American Hydraulics, (NAHI, LLC), partnering with Thoth Orbital Hydraulic Motors.

Orbital Hydraulic Motors
Solution Providers

BMM

8 to 50 cm³

BMP/BMPH

50 to 400 cm³

BMR

50 to 400 cm³

BMRW

50 to 400 cm³

BMRS

50 to 400 cm³

BMRY

50 to 400 cm³

BMH

200 to 500 cm³

BH

50 to 400 cm³

BS

50 to 400 cm³

BM3

80 to 400 cm³

BM3S

80 to 400 cm³

BM3W

80 to 400 cm³

BM4

160 to 500 cm³

BM4S

160 to 500 cm³

BM4W

160 to 500 cm³

BM4Y

160 to 500 cm³

BM5

315 to 985 cm³

BM5S

315 to 985 cm³

BM5W

315 to 985 cm³

BM6

800 to 1250 cm³

ZBMR

80 to 315 cm³

ZBMR/N

80 to 400 cm³

ZBM3

80 to 125 cm³

ZBM4

160 to 400 cm³

ZBM5/ZBM5B

400 to 630 cm³
630 to 800 cm³

ZBM6B

1250 cm³

Leader in Orbital Designs
Established 1971
Annual Production 400,000 Units
Over 1 Million Sq Ft Under Roof
Own R&D Development
Philosophy "Quality Achieves Dreams"

Displacements Below All Models

THOTH ziHYD®

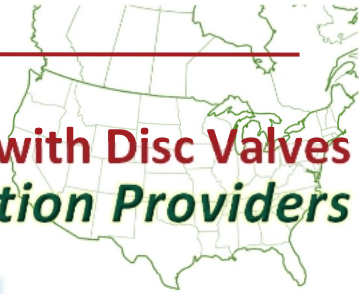
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D220421

NORTH AMERICAN HYDRAULICS

Orbital Hydraulic Motors with Disc Valves

Solution Providers



North American Hydraulics, (NAHI, LLC), partnering with Thoth Orbital Hydraulic Motors with Disc Valves.













BMM



BMP
BMPH



BMR



BMRW



BMRS



BMRY



BMH

Orbital Hydraulic Motors with Disc Valves

Series	Size	Displacement in³ / cm³	Max Speed rpm	Pressure bar cont	Pressure bar peak	Max Power kw
BMM	8	0.5/8.2	1950	100	200	1.8
	12.5	0.8/12.9	1550	100	200	2.4
	20	1.2/19.9	1000	100	200	2.4
	32	1.9/31.6	630	100	160	2.4
	40	2.4/39.8	500	90	160	2.4
	50	3.0/50.3	400	70	160	1.8
BMP BMPH	50	3.2/52.9	10-800	125	200	7.0
	80	4.8/79.3	10-770	125	200	10.0
	100	6.0/98.2	10-615	125	200	10.0
	125	7.3/120.9	10-480	125	200	10.0
	160	9.7/158.7	10-385	115	200	10.0
	200	12.0/196.4	10-310	110	200	8.0
	250	14.7/241.8	10-250	100	160	6.0
	315	19.3/317.3	10-195	90	130	5.0
	400	24.0/392.9	10-155	70	110	4.0
BMR BMRW BMRS	50	3.1/51.7	10-775	140	200	7.0
	80	4.9/80.5	10-750	140	200	10.0
	100	6.1/100.5	10-600	140	200	10.0
	125	7.7/126.3	10-475	140	200	10.0
	160	9.8/160.8	10-375	140	200	10.0
	200	12.2/200.9	10-300	140	200	8.0
	250	15.4/252.6	10-240	110	160	6.0
	315	19.6/321.5	10-190	90	130	5.0
	400	24.5/401.9	10-160	70	110	4.0
BMRY	50	3.1/51.7	10-775	175	220	8.9
	80	4.9/80.5	10-750	175	220	14.8
	100	6.1/100.5	10-600	175	220	14.8
	125	7.7/126.3	10-475	175	220	14.8
	160	9.8/160.8	10-375	175	220	14.8
	200	12.2/200.9	10-300	175	200	14.0
	250	15.4/252.6	10-240	140	180	12.0
	315	19.6/321.5	10-190	120	150	9.6
	400	24.5/401.9	10-160	100	140	8.4
BMH	200	12.4/203	370	155	200	14.0
	250	15.5/253.7	295	155	200	14.0
	315	19.4/318.9	235	135	190	12.5
	400	24.7/405.9	185	105	155	10.0
	500	28.7/471.1	155	85	130	8.5

Please contact NAHI for additional information.

The above information should be used as a guide and is subject to change without notice.

Please contact NAHI for proper selection.

THOTH ziHYD®

NORTH AMERICAN HYDRAULICS

Orbital Hydraulic Motors with Disc Valves

Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with Thoth Orbital Hydraulic Motors with Disc Valves.















Orbital Hydraulic Motors with Disc Valves

Series	Size	Displacement in³ / cm³	Max Speed rpm	Pressure bar cont	Pressure bar peak	Max Power kw
BH	50	3.2/52.9	710	105	180	5.2
	80	4.8/79.3	474	105	180	5.2
	100	6.0/98.2	282	105	180	5.2
	125	7.3/120.9	311	105	180	5.2
	160	9.7/158.7	236	105	180	5.2
	200	12.0/196.4	191	105	180	5.2
	250	14.7/241.8	157	90	150	4.6
	315	19.3/317.3	119	70	140	3.4
	400	24.0/392.9	96	70	110	3.4
BS	50	3.1/51.7	10-775	140	200	7.0
	80	4.9/80.5	10-750	140	200	10.0
	100	6.1/100.5	10-600	140	200	10.0
	125	7.7/126.3	10-475	140	200	10.0
	160	9.8/160.8	10-375	140	200	10.0
	200	12.2/200.9	10-300	125	180	7.0
	250	15.4/252.6	10-240	110	160	6.0
	315	19.6/321.5	10-190	90	130	5.0
	400	24.5/401.9	10-160	70	110	4.0

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THOTH ziHYD®

NORTH AMERICAN HYDRAULICS

Orbital Hydraulic Motors with Disc Valves

Solution Providers

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BM3



BM3S



BM3W



BM4



BM4S
Concept



BM4W



BM4Y
Concept

Orbital Hydraulic Motors with Disc Valves

Series	Size	Displacement in³ / cm³	Max Speed rpm	Pressure bar cont	Pressure bar peak	Max Power kw
BM3 BM3S BM3W	80	4.9/80.5	10-810	175	225	14.0
	100	6.1/100.5	10-750	175	225	16.0
	125	7.7/126.3	9-600	175	225	16.0
	160	9.8/160.8	7-470	160	225	14.0
	200	12.2/200.9	6-375	160	225	14.0
	250	15.4/252.6	6-300	125	200	11.0
	315	19.6/321.5	5-240	125	200	10.0
	400	24.5/401.9	5-180	100	175	8.0
BM4 BM4S BM4W	160	9.7/158.8	10-625	200	280	20.1
	200	12.2/200.8	9-500	200	280	25.2
	250	15.4/252.2	8-400	200	280	25.2
	320	19.3/317.5	7-312	200	280	25.2
	400	24.5/401.6	6-250	180	240	22.0
	500	32.6/535.3	5-175	160	210	21.0
BM4Y	160	9.7/158.8	10-625	240	300	24.1
	200	12.2/200.8	9-500	240	300	30.0
	250	15.4/252.2	8-400	240	300	30.0
	320	19.3/317.5	7-312	230	290	28.8
	400	24.5/401.6	6-250	210	250	25.3
	500	32.6/535.3	5-175	180	230	24.1
BM5 BM5S BM5W	315	19.2/314.9	10-475	200	280	32.0
	400	24.3/399.7	9-375	200	280	32.0
	500	30.3/496.6	8-300	200	280	32.0
	630	37.7/617.8	6-238	180	240	32.0
	800	48.0/787.4	5-187	160	210	32.0
	985	59.1/969.1	5-154	140	180	24.0
BM6	800	46.3/759.6	5-200	160	210	35.0
	1000	57.9/949.5	5-160	160	210	35.0
	1250	72.4/1186.8	5-130	160	210	35.0



BM5



BM5S
Concept



BM5W



BM6

THOTH ziHYD®

NORTH AMERICAN HYDRAULICS

Orbital Hydraulic Motors with Disc Valves

Solution Providers



North American Hydraulics, (NAHI, LLC), partnering with Thoth Orbital Hydraulic Motors with Disc Valves.

Features and Benefits:

- Can be automatic or external pilot pressure to release
- Friction plates with high strength springs
- Compact design
- Multi-disc friction brakes
- Great for injection molding machine and horizontal pulling applications





Please contact NAHI for additional information.

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Please contact NAHI for proper selection.



ZBMR



ZBMR/N



ZBM3



ZBM4



ZBM5
ZBM5B
Concept



ZBM6B
Concept





Orbital Hydraulic Motors with Brake

Series	Size	Displacement	Max Speed	Pressure bar		Brake Torque
		in³ / cm³	rpm	releasing	peak	Nm
ZBMR	80	4.9/80.5	20-500	13-17	140	250-300
	100	6.1/100.5	20-450	13-17	140	250-300
	125	7.7/126.3	20-400	13-17	140	250-300
	160	9.8/160.8	20-300	26-32	140	450-500
	200	12.2/200.9	20-250	26-32	140	450-500
	250	15.4/252.6	15-200	26-32	110	450-500
	315	19.6/321.5	15-160	26-32	90	450-500
ZBMR/N	80	4.9/80.5	60-500	24	140	450
	100	6.1/100.5	50-480	24	140	450
	125	7.7/126.3	40-380	24	140	450
	160	9.8/160.8	30-300	24	140	450
	200	12.2/200.9	25-240	24	140	450
	250	15.4/252.6	20-195	24	110	450
	315	19.6/321.5	15-150	24	90	450
	400	24.5/401.9	10-130	24	70	450
ZBM3	80	4.9/80.5	15-620	26	160	245
	100	6.1/100.5	15-500	26	160	245
	125	7.7/126.3	15-400	26	160	245
ZBM4	160	9.7/158.8	15-500	26	160	590
	200	12.2/200.8	12-400	26	160	824
	250	15.4/252.2	12-320	26	160	824
	320	19.3/317.5	10-250	26	160	824
	400	24.5/401.6	10-200	26	125	824
ZBM5	400	24.4/399.7	10-250	26	160	824
	500	30.3/496.6	10-200	26	160	1060
	630	37.7/617.8	10-160	26	130	1060
ZBM5B	630	37.7/617.8	30-200	30	160	1450
	800	48.0/787.4	30-150	30	160	1680
ZBM6B	1250	72.4/1186.8	20-110	36	160	2330

THOTH ziHYD®

NORTH AMERICAN HYDRAULICS

Power Thru Pump Drive
Solution Providers

North American Hydraulics, (NAHI, LLC), partnering with Transfluid Industrial & Marine StellaDrive Module Power Thru Pump Drives.

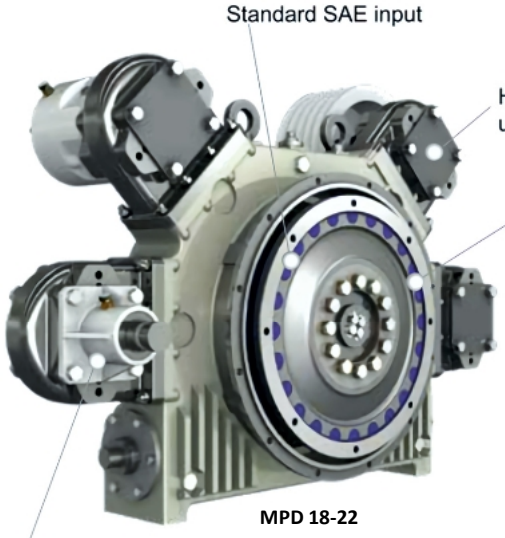
Features and Benefits:

- MPD Innovative module that fits between an engine and a transmission to drive multiple hydraulic pumps
- MPD Mounts directly to the engine SAE housing and flywheel
- MPD Uses an integrated, flexible coupling to dampen torsional vibrations and compensate for misalignment
- MPD Units self-contained with their lubrication circuit
- MPD Foot mounted designs are available
- SPD Dual Pump Drives are innovative modular split power drives designed to be mounted on industrial engines with SAE flywheels and housings
- SPD Input elastic coupling absorbs radial and angular misalignments as well as dampen torsional vibrations
- SPD Output is dual pad SAE A or B pump tower as well as SAE flywheel and flywheel housing
- SPD Easy installation in 12 possible positions over 360°
- SPD Output flywheel can accept transmissions, pumps, compressors and PTO's

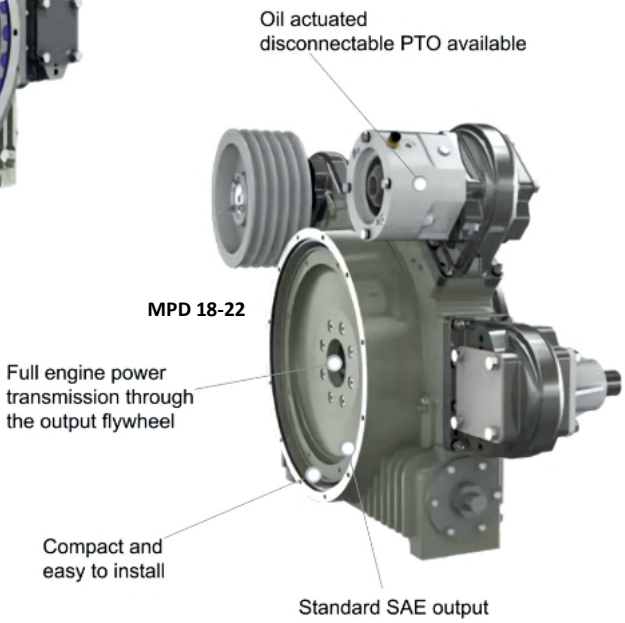
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Please contact NAHI for proper selection.



MPD 18-22



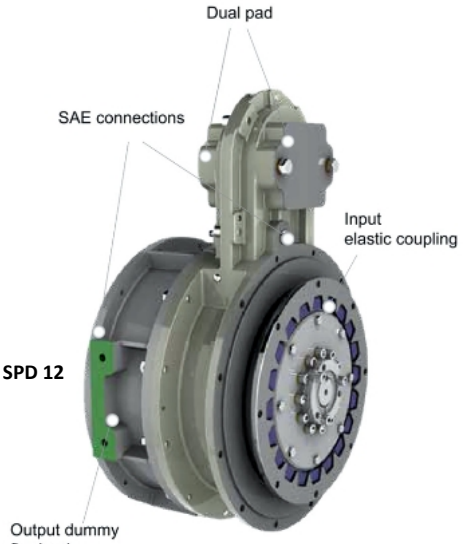
MPD 18-22

Proven Solutions for:

Agriculture Machinery, Compressors, Crushers, Dredges, Drilling Machine, Earth Moving Machine, Forest Machinery, Marine Propulsion, Mills, Pump Sets, Railway, Recycling Machinery, Road Milling Machine, Shredders, Special Vehicles, Woodchippers, Engines



SPD 11



SPD 12

drive with us TRANSFLUID industrial & marine

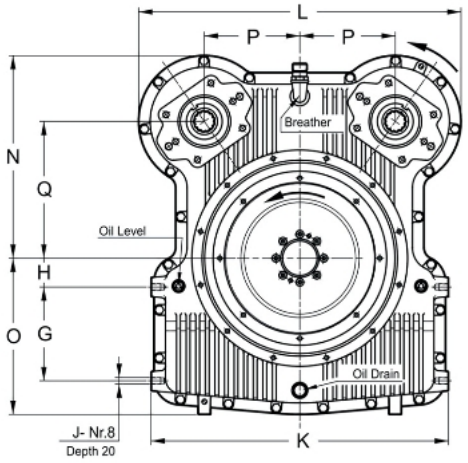
NORTH AMERICAN HYDRAULICS

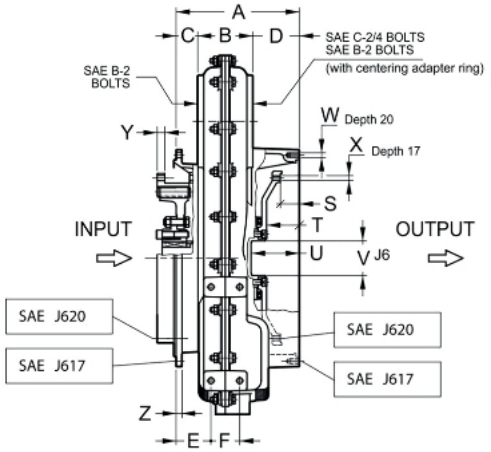
Power Thru Pump Drive
Solution Providers

Technical Data

Size	Weight w/o Oil kg	Oil Quantity l	Max Speed rpm	Max Input Torque Nm	Total Heads kW	Single Head kW	Ratio (n1:n2)
14	195	12.5	2600	2000	175	120	1.0
18	350*	18	2200	3350	300**	120**	1.0 (0.88)
22	530*	35	2100	6300	400**	175**	0.95

* deduct 20 kg for each head
** @max.speed

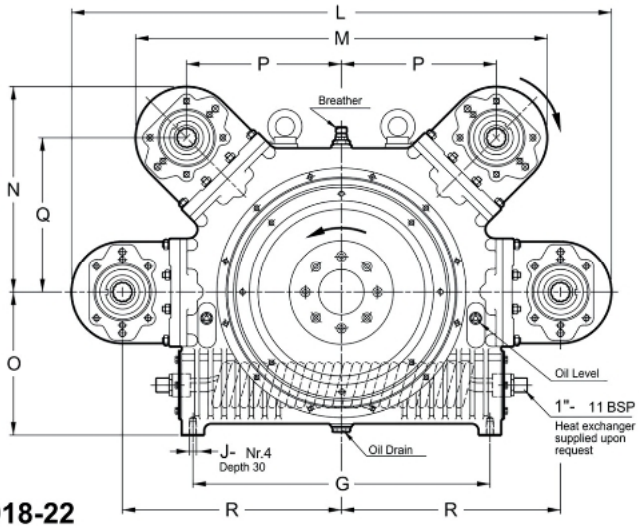


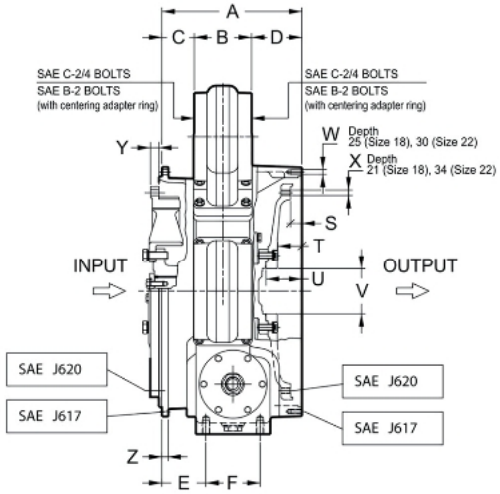


MPD14

Dimensions

Size	INPUT SAE J617	INPUT SAE J620	OUTPUT SAE J617	OUTPUT SAE J620	A	B	C	D	E	F	G	H	J	K	L	N	O	P	Q	S	T	U	V	W Ø	W N°	X Ø	X N°	Y	Z
14	3	11½"	3	11½"	257	115	45	97	72.5	60	195	60	M14	620	673	422	325	199.2	284.5	39.6	68.1	100	72	M10	12	M10	8	52	12
	2																												
	1	14"			282		70		97.5																			12	14





MPD18-22

Dimensions

Size	INPUT SAE J617	INPUT SAE J620	OUTPUT SAE J617	OUTPUT SAE J620	A	B	C	D	E	F	G	J	L	M	N	O	P	Q	R	S	T ***	U ***	V ***	W Ø	W N°	X Ø	X N°	Y	Z
18	1	14"	1	14"	310	127	71.5	111.5	97.5	120	658	M16	1197	913	456.5	315	343	343	485.2	25.4	53.5	79	100	M10	12	M12	8	18	14
22	1	14"	0	18"	374		119	128	134	130	772	M18	1326	1004	502	415	388.7	388.7	549.7	15.7	48.2	81	150	M12	16	M16	6	85	15
	0	18"			363		108																					18	20

*** not SAE standard

drive with us TRANSFLUID industrial & marine

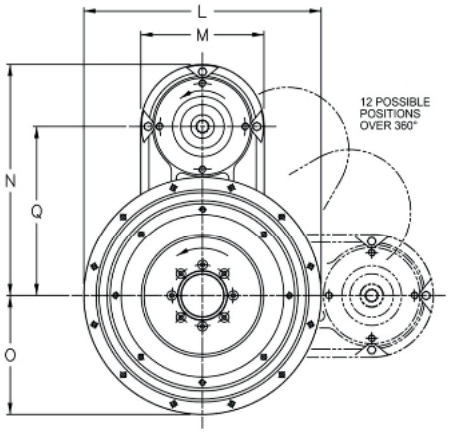
NORTH AMERICAN HYDRAULICS

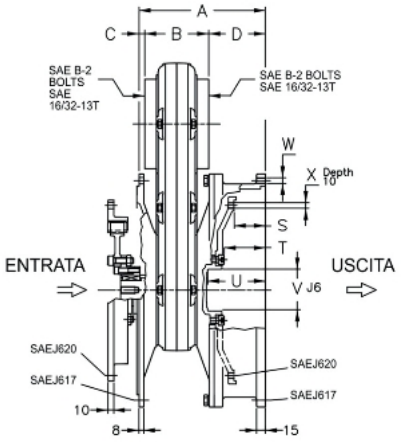
Power Thru Pump Drive
Solution Providers

Technical Data

Size	Weight	Max Speed	Max Input Torque Nm			Heads	Ratio
	kg	rpm	SAE 3	SAE 4	SAE 5	kW*	(n1:n2)
11	50	3000	560	560	310	53	1.0
12	773	3000	860	560	-	120	0.93

* @ 3000 rpm

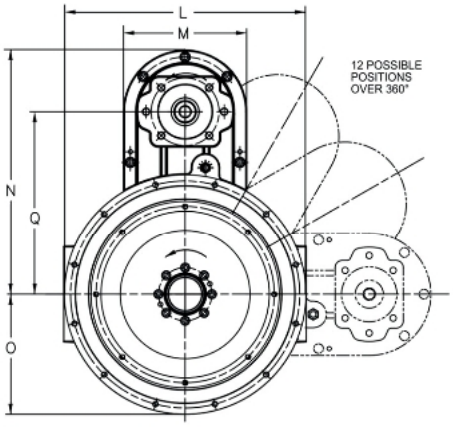


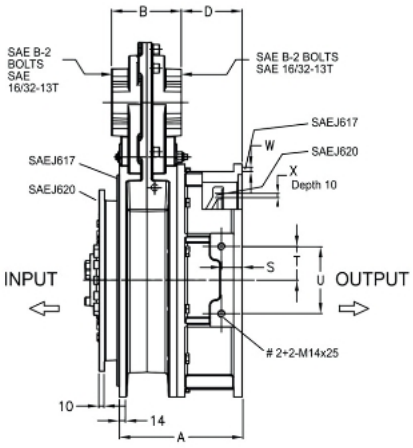


SPD 11

Dimensions

Size	INPUT SAE J617	INPUT SAE J620	OUTPUT SAE J617	OUTPUT SAE J620	A	B	C	D	L SAE 3	L SAE 4	L SAE 5	M	N	O SAE 3	O SAE 4	O SAE 5	Q	S	T	U	V	W Ø	W N°	Y Ø	Y N°
11	3 4 5	11½ 10" 7½	4	10	218.5	111	9.5	98	451	404	356	210	393	225.5	202	178	288	53.8	71	100	72	M10	12	M10	8





SPD 12

Dimensions

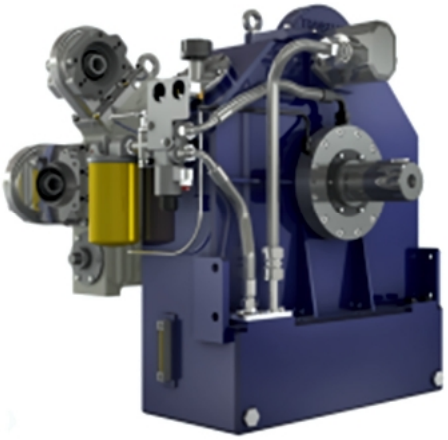
Size	INPUT SAE J617	INPUT SAE J620	OUTPUT SAE J617	OUTPUT SAE J620	A	B	D	L	M	N	O	Q	S	T	U	W Ø	W N°	X Ø	X N°
12	3 4	11½ 10"	3 4	11½ 10	237 247	134	117 127	454	231	460	226	344	40 50	65	130	M10	12	M10	8

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NORTH AMERICAN HYDRAULICS

Power Thru Pump Drive
Solution Providers

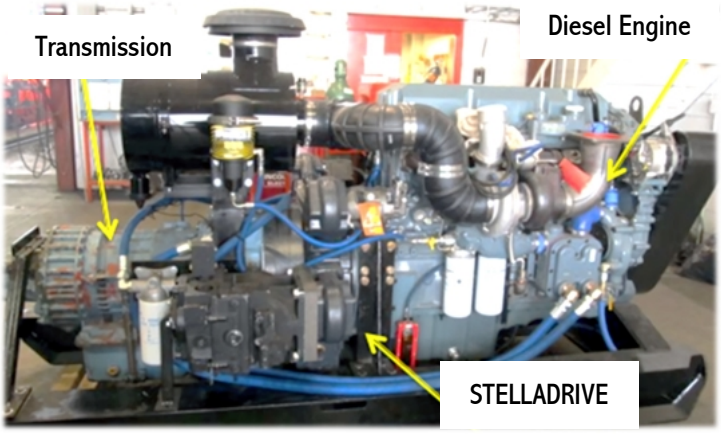






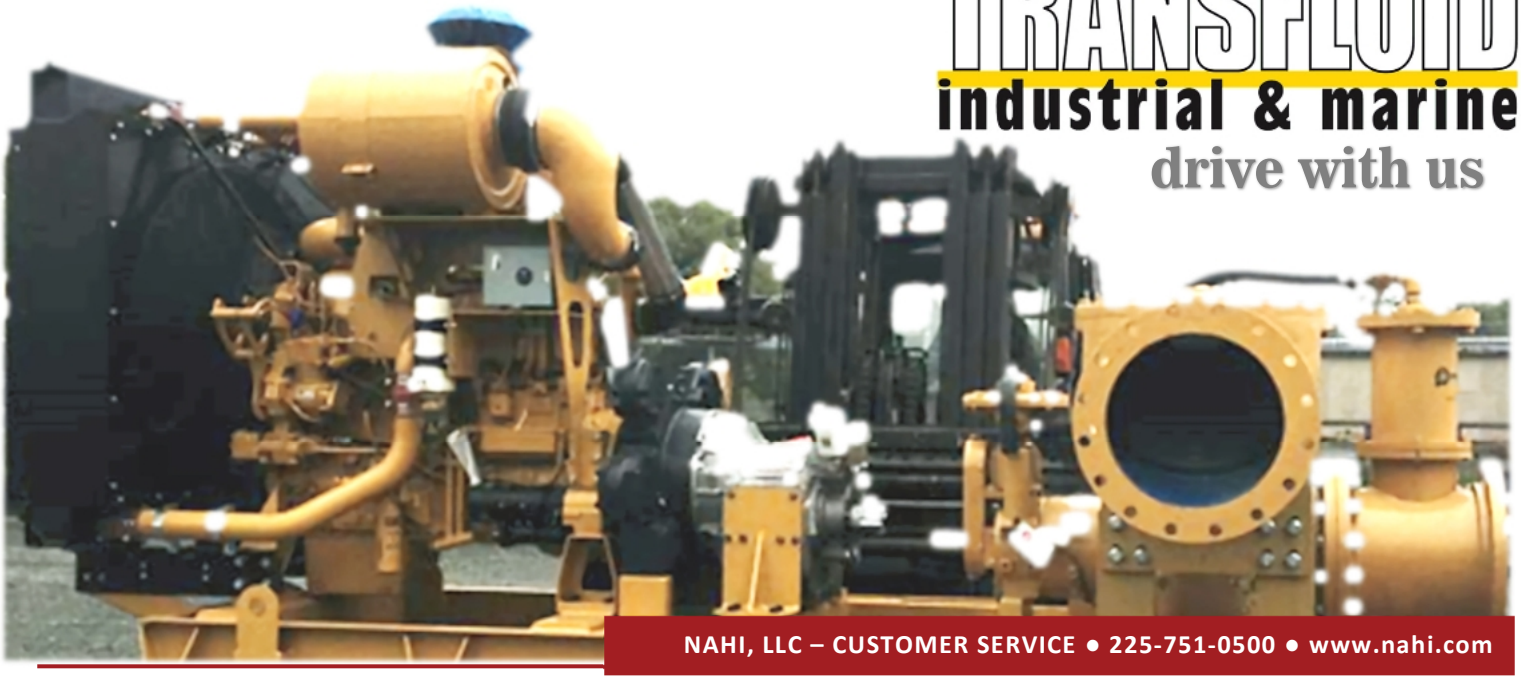
MPD with MARINE GEAR







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industrial & marine
drive with us



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D220127