General Catalog Of Components And Systems For Controlled Hydraulic Power Applications

SAUER SUNDSTRAND

Components and Systems for Controlled Hydraulic Power Applications

Providing Controlled Hydraulic Power Systems and components for Off-Highway Vehicles Worldwide

Sauer-Sundstrand was established in 1987, combining the businesses of Sauer-Getriebe in Europe and Sundstrand Hydraulic Power Systems of North America, solidifying a relationship which had begun 20 years earlier. The holding company for the Sauer-Sundstrand group of companies is Sauer, Inc., a U.S. corporation.

Today, Sauer-Sundstrand products are manufactured in eight countries on four continents around the world. They are marketed to thousands of original equipment manufacturers of off-road vehicles.

Ames, Iowa, USA Plant

Maximizing Productivity Through Hydraulics

With a mission focused on the off-highway and special purpose on-highway mobile equipment markets, Sauer-Sundstrand has developed a wide selection of hydrostatic, hysraulic, and control components specifically designed for these industries. This enables you to select components that will result in systems optimized in performance, efficiency, and size.

For specific applications, Sauer-Sundstrand will integrate the appropriate system components into a single package. Hydraulics, hydrostatics, mechanical drives, and electronic controls can be combined to provide the ultimate in system optimization and simplification.

Neumünster, Germany Plant

Our Commitment to Our Customers

But Sauer-Sundstrand's products are only part of our story. How we go about meeting your needs and those of your entire organization is also important. As we move forward with our mission, we measure the success of each of our business units in five principle areas:

- Commitment to Total Quality
- Responsiveness to Customers
- Technology Advancement
- Meaningful Employee Involvement
- Profitable Growth

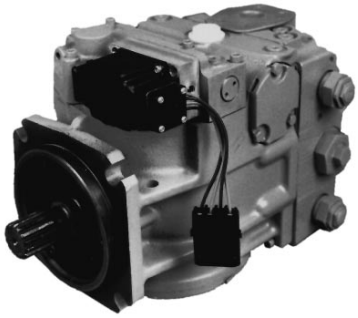
When you understand "how we conduct our business," you will be confident in our ability to interpret your needs and fulfill them. We invite you to visit any and all of our operations around the world to get to know some of the many Sauer-Sundstrand prople who are anxious to meet your needs.

REACHING for EXCELLENCE

Sauer-Sundstrand's Commitment to Total Quality, through Innovative Products and Exceptional Customer Service.

Contents

Axial Piston Variable Pumps



- **The Most Technically Advanced High Power Hydrostatic Pumps in the Industry**
- **Modular Design, with Standard Porting and Standard Mounting, Provides the Optimum Product Configuration for Your Application without Expensive Custom Components**
- **A Wide Selection of Available Pump Displacements Provide Optimum Component Matching and System Performance**
- **Speed Sensor Option for Microprocessor Control Interface**
- **Full Power Auxiliary Pads Allow Tandem Mounting of Standard Pumps, Reducing Drive Line Costs**
- **A Complete Family of Control Systems Permits You to Tailor the Operator / Machine Interface to Your Customer's Requirements**
  - **Manual Displacement Control (MDC) Option Provides Positive, Low Cost Operator Control**
  - **Hydraulic Displacement Control (HDC) Option Interfaces with Other Hydraulic Controls**
  - **Electrical Displacement Control (EDC) Option Interfaces with Sophisticated Electrical / Electronic Control Systems**
  - **Automotive Control ("Automatic-Drive") Option Provides the Operator with the Feel and Convenience of a Torque Convertor / Automatic Transmission**
  - **3-Position (F-N-R) Electrical Control Option Provides a Simple Control for Non-Propel Machine Functions**
- **Pressure Limiter or Pressure Override Protects Drive System while Conserving Power**
- **Suction and Pressure (Remote or Integral) Filtration Options Provide System Design Flexibility while Lengthening Component Life**
- **Maximum Pressures to 480 bar (7000 psi)**
- **Continuous Operating Temperatures to 104°C (220° F)**

Technical Data		Frame Size						
	Dimension	**042**	**055**	**075**	**100**	**130**	**180**	**250** ❊
Displacement	cm^3 in^3	42 2.56	55 3.35	75 4.57	100 6.10	130 7.93	180 10.98	250 15.25
Input Speed - Rated	min^{-1} (rpm)	4200	3900	3600	3300	3100	2600	2300
Input Speed - Maximum	min^{-1} (rpm)	4600	4250	3950	3650	3400	2850	2500
Mounting Flange - SAE	—	B	C	C	C	D	E	E

Configuration Availability	Frame Size Availability						
	042	**055**	**075**	**100**	**130**	**180**	**250** ❊
Twin System Ports	●	●	●	●	●	●	●
Radial (Side) System Ports)		●	●	●			

❊ In Development

For more detailed information, refer to Series 90 Pumps Technical Information, BLN-10029.

Axial Piston Fixed Motors

(SAE Flange Mount Shown)

Axial Piston Variable Motors

(Cartridge Mount Shown)

- **The Most Technically Advanced High Power Hydrostatic Motors in the Industry**
- **Modular Design, with Standard Porting and Standard Mounting, Provide the Optimum Product Configuration for your Application Without Expensive Custom Components**
- **A Wide Selection of Available Motor Displacements Provide Optimum Component Matching and System Performance**
- **Variable Motors with a 3:1 Maximum to Minimum Displacement Ratio Increase Powertrain Flexibility and Performance by Providing a Choice of "Maximum Torque" or "Maximum Speed" Operating Modes**
- **Variable Motors are Available with 2-Position Hydraulic or Electric Controls for Design Flexibility**
- **Speed Sensor Option for Microprocessor Control Interface and Electronic Indicators**
- **Loop Flushing Circuit Provides Continuous Cooling and Flushing Oil Flow to Increase Power Capability and Extend Life**
- **SAE Flange Motors Mount on Standard Gear Boxes**
- **Cartridge Motors Install Directly into Compact Planetary Drives to Minimize Combined Length**
- **Maximum Pressures to 480 bar (7000 psi)**
- **Continuous Operating Temperatures to 104°C (220° F)**

Technical Data			Dimension	Frame Size **042**	**055**	**075**	**100**	**130**
Displacement			cm^3 in^3	42 2.56	55 3.35	75 4.57	100 6.10	130 7.93
Output Speed	Rated	Max. Disp. Min. Disp.	min^{-1} (rpm) min^{-1} (rpm)	4200 —	3900 4600	3600 4250	3300 —	3100 —
	Maximum	Max. Disp. Min. Disp.	min^{-1} (rpm) min^{-1} (rpm)	4600 —	4250 5100	3950 4700	3650 —	3400 —
Mounting Flange - SAE			—	—	C	C	C	D
Theoretical Torque (MV at Maximum Displacement)			Nm/bar lbf•in/1000 psi	.67 380	.88 530	1.19 730	1.59 970	2.07 1260

Configuration Availability	Frame Size Availability **042 MF**	**055 MF**	**055 MV**	**075 MF**	**075 MV**	**100 MF**	**130 MF**
SAE Flange Mount		●	●	●	●	●	●
Cartridge Flange Mount	●	●	●	●	●		

For more detailed information, refer to Series 90 Motors Technical Information, BLN-10030.

Bent Axis Variable Motors

(SAE Flange Mount Shown)

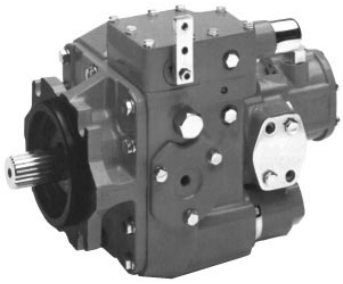
- **The Most Technically Advanced Bent Axis Hydrostatic Motors in the Industry**
- **Modular Design, with Standard Porting and Standard Mounting Options, Provide the Optimum Product Configuration for Your Application Without Expensive Custom Components**
- **A Wide Selection of Available Motor Displacements Provide Optimum Component Matching and System Performance**
- **Large Maximum to Minimum Displacement Ratio (5:1) Simplifies Powertrains by Providing Optimum Combinations of Torque and Speed As Required, While Minimizing Pump and Prime Mover Sizes**
- **A Complete Family of Control Systems Permits You to Tailor the Operator / Machine Interface to Your Customer's Requirements**
  - **2-Position Hydraulic or Electric Controls Provide a Choice of "Maximum Torque" or "Maximum Speed" Operating Modes**
  - **Proportional Hydraulic or Electric Controls Provide Infinite Combinations of Torque and Speed**
  - **Pressure Compensator (as a Stand-Alone Control or as an Over-Ride in Combination with Other Controls) Automatically Increases Motor Torque as Load Increases**
- **Speed Sensor Option for Microprocessor Control Interface and Electronic Indicators**
- **Loop Flushing Circuit Provides Continuous Cooling and Flushing Oil Flow to Increase Power Capability and Extend Life**
- **SAE Flange and DIN / ISO Flange Motors Mount on Standard Gear Boxes**
- **Cartridge Motors Install Directly into Compact Planetary Drives to Minimize Combined Length**
- **Maximum Pressures to 480 bar (7000 psi)**
- **Continuous Operating Temperatures to 104°C (220° F)**

Technical Data			Dimension	Frame Size **080**	**110**	**160**	**250**
Displacement		Maximum	cm^3 in^3	80 4.92	110 6.71	160 9.82	250 15.26
		Minimum	cm^3 in^3	16.1 0.98	22.0 1.34	32.2 1.96	50.0 3.05
Output Speed	Rated	Max. Disp. Min. Disp.	min^{-1} (rpm) min^{-1} (rpm)	3100 5000	2800 4500	2500 4000	2200 3400
	Maximum	Max. Disp. Min. Disp.	min^{-1} (rpm) min^{-1} (rpm)	4000 6250	3600 5600	3200 5000	2700 4250
Mounting Flange - SAE			—	C	D	D	E
Theoretical Torque MV at Maximum Displacement			Nm/bar lbf•in/1000 psi	1.28 784	1.75 1067	2.56 1563	3.98 2428

Configuration Availability	Frame Size Availability **080**	**110**	**160**	**250**
SAE Flange Configuration	●	●	●	●
DIN / ISO Flange Configuration	●	●	●	●
Cartridge Flange Configuration	●	●	●	

For more detailed information, refer to Series 51 Motors Technical Information, BLN-10042.

Axial Piston Variable Pumps



Axial Piston Fixed Motors

- **Variable Displacement Pumps and Fixed Displacement Motors**
- **The Product Line that Popularized Hydrostatic Transmissions in the Mobile, Off-Road Market**
- **Larger Displacements for Applications Requiring "Higher Flows"**
- **Standard Porting and Mounting Provides the Lowest Cost Product Configuration for Your Application**
- **SAE "A" and "B" Auxiliary Pads Mount Additional Pumps, Reducing Drive Line Costs**
- **Available with the Most Popular Control Systems to Permit You to Tailor the Operator / Machine Interface to Your Customer's Requirements**
  - **Manual Displacement Control (MDC) Option Provides Positive, Low Cost Operator Control**
  - **Hydraulic Displacement Control (HDC) Option Interfaces with Other Hydraulic Controls**
  - **Electrical Displacement Control (EDC) Option Interfaces with Electrical / Electronic Control Systems**
- **Motor Loop Flushing Circuit Provides Continuous Cooling and Flushing Oil Flow to Increase Power Capability and Extend Life**
- **Reliability Proven in Over 30 Years of Field Experience**
- **Maximum Pressures to 415 bar (6000 psi)**
- **Continuous Operating Temperatures to 82° C (180° F)**
- **Axial Piston Variable Motors Also Available**
- **Open Circuit Versions of Series 20 Variable Pumps are Available.**
  (Refer to Sauer-Sundstrand BLN-9698 for information.)

Technical Data	Dimension	Frame Size			
		24	**25**	**26**	**27**
Displacement	cm^3 in^3	119 7.24	166 10.12	227 13.87	334 20.36
Input Speed - Rated	min^{-1} (rpm)	2700	2400	2100	1900
Mounting Flange - SAE	—	D	E	E	F
Motor Theoretical Torque	Nm/bar lbf•in/1000 psi	1.89 1152	2.64 1614	3.62 2208	5.31 3240

For more detailed information on closed circuit units, refer to Series 20 Pumps and Motors Technical Information, BLN-9565.

Axial Piston Variable Pumps

- **The Most Technically Advanced Intermediate Power Hydrostatic Pumps in the Industry**
- **Modular Design, with Standard Porting and Standard Mounting, Provides the Optimum Product Configuration for Your Application without Expensive Custom Components**
- **Full Power Auxiliary Pads Allow Tandem Mounting of Standard Pumps, Reducing Drive Line Costs**
- **A Complete Family of Control Systems Allows You to Tailor the Operator / Machine Interface to Your Customer's Requirements**
  - **Manual Displacement Control (MDC) Option Provides Positive, Low Cost Operator Control**
  - **Non-Feedback Proportional Hydraulic Control (NFPH) Option Provides Instant Response to Operator Feedback**
  - **Electrical Displacement Control (EDC) Option Interfaces with Sophisticated Electrical / Electronic Control Systems**
  - **3-Position (F-N-R) Electrical Control Option Provides a Simple Control for Non-Propel Machine Functions**
- **Speed Sensor Option for Microprocessor Control Interface**
- **Loop Flushing Circuit Option Provides Continuous Cooling and Flushing Oil Flow to Increase Power Capability and Extend Life**
- **Suction and Pressure Filtration Options Provide System Design Flexibility While Lengthening Component Life**
- **Maximum Pressures to 350 bar (5000 psi)**
- **Continuous Operating Temperatures to 104°C (220° F)**

Technical Data		Dimension	Frame Size **28**	**41**
Displacement		cm^3 in^3	28 1.71	41 2.50
Input Speed	Rated	min^{-1} (rpm)	3400	3400
	Maximum	min^{-1} (rpm)	3900	3900
Length (Standard Pump)		mm in	199.5 7.85	225.5 8.88
Mounting Flange - SAE		—	B	B

Sauer-Sundstrand's Series 42 Variable Pump was selected for "The AE 50" outstanding innovation in product or systems technology – 1994, awarded by *Resource: Engineering & Technology for a Sustainable World*, the monthly publication of ASAE.

For more detailed information, refer to Series 42 Pumps Technical Information, BLN-10042.

Series 40 Axial Piston Variable Pumps

35 Single

25 Tandem

Series 40 Axial Piston Motors

25 Fixed

46 Variable

- **Technically Advanced Hydrostatic Units**
- **Standard Porting and Standard Mounting Provides the Optimum Product Configuration for Your Application Without Expensive Custom Components**
- **A Range of Pump and Motor Displacements Provide Optimum Component Matching and System Performance**
- **Integrated Tandem Pump Configurations Reduce Drive Line Costs and Minimize Package Length**
- **15 cc, 25 cc, and 35 cc Variable Units with Direct Displacement Control (DDC) Provide Positive, Low Cost Operator Control**
- **46 cc Pumps are Available with the Most Popular Control Systems to Permit You to Tailor the Operator / Machine Interface to Your Customer's Requirements**
  - **Manual Displacement Control (MDC)**
  - **Hydraulic Displacement Control (HDC)**
  - **Electrical Displacement Control (EDC)**
- **Series 40 Motor Loop Flushing Circuit Option Provides Continuous Cooling and Flushing Oil Flow to Increase Power Capability and Extend Life**
- **Maximum Pressures to 350 bar (5000 psi)**
- **Continuous Operating Temperatures to 104° C (220° F)**

Technical Data			Dimension	Frame Size **15**	**25**	**35**	**46**
Displacement			cm^3 in^3	15 0.91	25 1.50	35 2.14	46 2.80
Speed	Rated	Max. Disp. Min. Disp. (MV)	min^{-1} (rpm) min^{-1} (rpm)	4000 —	4000 —	3600 4100	4000* 5000
	Maximum	Max. Disp. Min. Disp. (MV)	min^{-1} (rpm) min^{-1} (rpm)	4200 —	5000 —	4500 5300	4100* 6000
Theoretical Torque (MV at Maximum Displacement)			Nm/bar lbf•in/1000 psi	0.24 146	0.39 238	0.56 342	0.73 446
Control Type	Variable Pumps		—	Direct	Direct	Direct	Int. "Servo"
	Variable Motors		—	—	Direct	Direct	2-Pos Hyd

* Frame size 46 fixed motors have a rated and maximum speed of 3600 min^{-1} (rpm).

Option Availability	Frame Size **15**	**25**	**35**	**46**
SAE Auxiliary Pads	AA & A	A	A & B	A & B
Suction or Remote Filtration		●	●	●
Adjustable Displacement Limiters				●
Loop Flushing Circuit Option in Motors		●	●	●

For more detailed information, refer to 15 Series Technical Information, BLN-10006, Series 40 Pumps Technical Information BLN-9989, and Series 40 Motors Technical Information BLN-9990.

Series 70 Transmissions and Variable Pump

Variable Pump

Variable Pump / Fixed Motor Transmission

- **Axial Piston Variable Pump (10 cm³) Designed for "Split System" Mounting Versatility when Combined with Piston or Gerotor Motors**
- **"U" Style Transmissions (10 cm³ and 21 cm³) with Pump and Motor Combined in a Single Unit to Simplify Drive Systems**
- **Innovative Design and Manufacturing Processes Make the Benefits of Hydrostatic Drive Available at Minimal Additional Cost**
- **Compact and Lightweight to Save Space and Cost**
- **Integral Charge Pump Increases Unit Power Capacity**
- **Maximum Pressures to 145 bar (2100 psi)**

Technical Data	Dimension	Frame Size		
		Variable Pump	Transmissions	
		BDP-10L	**BDU-10L**	**BDU-21L**
Displacement	cm^3 in^3	10 0.61	10/10 0.61/0.61	21/21 1.28/1.28
Min. Input Speed	min^{-1} (rpm)	1800	1800	1800
Max. Input Speed	min^{-1} (rpm)	3600	3600	3200
Theoretical Torque (Motor)	Nm/bar lbf•in/100 psi	— —	0.14 8.5	0.30 18.0

Transaxle Packages and Reduction Drives

Model 310-0750

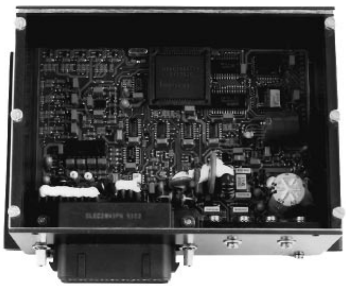
Model 210-2510L

- **310-0500 and 310-0750 Transaxles with Integrated Hydrostatic Transmissions Save Space and Simplify Drive Systems**
- **210-3010L Transaxle Equipped with Series 70 Hydrostatic Transmission Lowers Your Costs**
- **210-2510L Transmission / Reduction Drive provides Design Flexibility for "Dual Path" Drives and Specialized Applications**
- **Transaxles are Equipped with Bypass ("Free-Wheel") and Brake to Provide a Complete Power Train Package**

Hydrostatic Transaxles		Dimension	Transaxle Size			
			310-0500	**310-0750**	**210-2510L**	**210-3010L**
Hydro. Transmission		—	integrated	integrated	BDU-10L	BDU-10L
Max. Input Speed		min^{-1} (rpm)	2500	3000	3600	3600
Overall Reduction		—	15.5:1	24.2:1	23.1:1	30.4:1
Output Torque	Intermittent	Nm lbf•ft	308 227	447 330	496 366	650 479
	Continuous	Nm lbf•ft	163 120	237 175	264 195	353 260

For more detailed information, refer to Sauer-Sundstrand brochure, BLN-10052.

Microcontrollers



SUSMIC Single Loop Microcontroller

- Mobile, Off-Highway Microcomputers
- Modular, Flexible Design
- 16 bit Microcontroller
- EEPROM
- Same Unit may be used with 12 VDC or 24 VDC Supply Voltage
- RS232 Interface
- CAN Bus Network (Optional)
- Software Download without Hardware Changes
- Easy Service

DC2 Microcontroller

Control System Components

Controllers

MODEL	VALVE TYPE	SENSOR INPUT	APPLICATION	TECHNICAL BULLETIN
DC2	Servo / Pump Control	Analog / Digital	Multiple Function Microcontroller	BLN-95-9041
SUSMIC 10	Servo / Pump Control	Analog / Digital	Multiple Function Microcontroller	BLN-96-9241-1E
MCE100A/B	Pump Control	Speed	Output Speed Regulation	BLN-95-8968
MCE101A	Pump Control	Speed	Automotive / Load Control	BLN-95-8959
KE07	Servo / Pump Control	DC	Pump Valve Drive	BLN-95-9023

Sensor / Controller Packages

MODEL	VALVE TYPE	SENSOR TYPE	APPLICATION	TECHNICAL BULLETIN
W894A	Servo	Microsyn	Slope	BLN-95-8974
W895A	Servo	Microsyn	Grade, Steer	BLN-95-8973
MCW102A	Solenoid	Hall	Grade, Steer	BLN-95-8970
MCW102B	Servo	Hall	Grade, Steer	BLN-95-8970
MCW104A	Servo	Hall	Position	BLN-95-8960
ACW112A, D	Solenoid	Magnetic	Leveling	BLN-95-8952
KTA	Solenoid	Photocell	Tilt Alarm	BLN-95-9037
MCH/EDC	Pump Control	Potentiometer	Operator Control	BLN-95-9007
ACX104B	Servo	Potentiometer	Position	BLN-95-8913
KEP	Servo / Pump	Potentiometer	Electronic Pedal	BLN-95-9043

Transducers

MODEL	INPUT	SENSOR TYPE	APPLICATION	TECHNICAL BULLETIN
KS10201	Gravity	Microsyn	Level Sensor	BLN-95-8912
SB104A	Rotary	Microsyn	Grade, Steer Sensor	BLN-95-8971
MCX103B/D	Rotary	Magnetic	Position Sensor	BLN-95-9040
MCQ101A/ B	Manual	Potentiometer	Setpoint, Digital	BLN-95-8989

Servo Actuators

MODEL	INPUT	ACTUATOR	APPLICATION	TECHNICAL BULLETIN
MCV116A	DC	Pressure Control	Pilot	BLN-95-9033
MCV104A	DC	EDC Pump Control	Series 20, 30 Pumps	BLN-95-8965
MCV105A	DC	EDC Pump Control	Series 40-M46 Pumps	BLN-95-8988
MCV106A	DC	HDC Pump Control	Series 20, 30 Pumps	BLN-95-8972
MCV111B	DC	EDC Pump Control	Series 90 Pumps	BLN-95-8995
KVF	DC	Flow Control	Open Circuit Servovalve	BLN-95-9042
MCV115A	DC	HDC Pump Control	Series 90 Pumps	BLN-95-9039

High Performance Gear Pumps and Motors/ Series L Axial Piston Variable Pumps

Gear Pumps

TFP 50 Pump

DIN Flanges & Shaft
5 models 0.25 – 1.27 cm^3 (0.015 – 0.074 in^3)
Speeds to 8000 rpm
Pressures to 200 bar (2900 psi)

TFP 100 Pumps

SAE "AA" & DIN Flanges & Shafts
7 models 1.20 – 7.8 cm^3 (0.071 – 0.464 in^3)
Speeds to 5000 rpm
Pressures to 210 bar (3000 psi)

SNP2 Pumps

SAE "A" & DIN Flanges & Shafts
11 models 3.4 – 25.2 cm^3 (0.24 – 1.54 in^3)
Speeds to 4000 rpm
Pressures to 250 bar (3600 psi)

SP2.5/250 Pumps

SAE "A" & "B" 2-Bolt Flanges
SAE "A" & "B" 11T & 13T spline shafts
SAE "A" & "B" .75" & .875" keyed shafts
8 models 20 – 45 cm^3 (1.22 – 2.75 in^3)
Speeds to 3000 rpm
Pressures to 250 bar (3600 psi)
Priority Flow Divider Covers

SNP3 Pumps

SAE "B" & DIN Flanges & Shafts
10 models 22.1 – 88.2 cm^3 (1.35 – 5.38 in^3)
Speeds to 3000 rpm
Pressures to 250 bar (3600 psi)

(The model SEP3 pumps, with lower pressure capabilities, are available in 22.1 – 44.1 cm^3 [1.35 – 2.69 in^3] displacements.)

CP180 Pumps

SAE "B" Flanges & Shafts
11 models 31.79 – 95.7 cm^3 (1.94 – 5.38 in^3)
Speeds to 3200 rpm
Pressures to 250 bar (3600 psi)
Priority Flow Divider Covers

CP222 Pumps

SAE "C" 2 & 4-Bolt Flanges & Shafts
7 models 64.8 – 162.0 cm^3 (3.95 – 9.89 in^3)
Speeds to 3000 rpm
Pressures to 250 bar (3600 psi)

Gear Motors

TFM 100 Motors

DIN Flanges & Shafts
6 models 2.60 – 7.8 cm^3 (0.158 – 0.464 in^3)
Speeds to 3000 rpm
Pressures to 200 bar (2900 psi)

SNM2 Motors

SAE "A" & DIN Flanges & Shafts
10 models 6 – 25.2 cm^3 (0.366 – 1.54 in^3)
Speeds to 4000 rpm
Pressures to 250 bar (3600 psi)

(The SNU2 Unidirectional motor is available in 8.4 – 25.2 cm^3 [0.513 – 1.54 in^3] .)

TAM2290 Motors

SAE "B" & DIN Flanges & Shafts.
9 models 22 – 90 cm^3 (1.34 – 5.49 in^3)
Speeds to 3000 rpm.
Pressures to 210 bar (3000 psi).

(The TAU2290 Unidirectional motor is available in the same displacements.)

Fan Drive Systems

Available in 5 to 36 HP configurations
Fan speed modulated based temperature
Options for additional inputs
Contact Sauer-Sundstrand for details and specifications

Steering Pumps

Available in 8 – 45 cm^3 (0.49 – 2.75 in^3)
Special and or engine mount available (ie. Perkins, Deutz, Kubota, etc.)
Flanges and shafts for several engines
Contact Sauer-Sundstrand for details and specifications

Open Circuit Piston Pumps

Pressure or Pressure/Flow Compensated
Series L Available in 14.8 — 37.3 cm^3 (0.91 — 2.3 in^3)
Maximum Pressures to 210 bar (3000 psi)
Series 20 Available in 69.8 — 333.6 cm^3 (4.26 — 20.36 in^3)
Maximum Pressures to 350 bar (5000 psi)

NOTE: All gear pumps can be incorporated into multiple pump configurations. Contact Sauer-Sundstrand for details and specifications.

For more detailed information, refer to Gear Pumps and Motors catalog BLN-10067, Series L Open Circuit Pumps Technical Information BLN-9825, or Series 20 Open Circuit Pumps brochure BLN-9698.

Open Circuit Hydraulic System Products

Electrohydraulic Valves

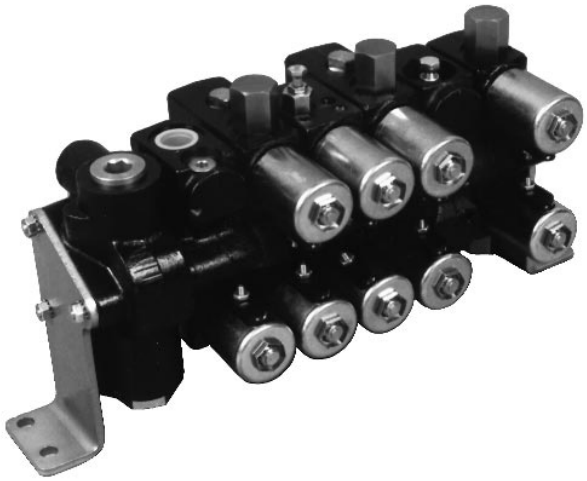
MV 21000 Proportional Priority Flow Control Valve

- **Proportionally Controls Output Flow (Motor Speed) in Response to a Remote Electrical Signal**
- **Pulse Width Modulation Electrical Signal Input**
- **Pressure Compensated to Maintain Constant Output Flows Regardless of Load**
- **When Combined with an SCA-35 PWM Amplifier, the MV 21000 Provides Complete Open Loop Proportional Flow Control**
- **Output Flow from 0 to 38 l/m (0 to 10 gpm)**
- **Maximum Inlet Flow of 76 l/m (20 gpm)**
- **Maximum Operating Pressures to 220 bar (3200 psi) via Adjustable Relief Valve**

Available Versions Include:

OC	Open Center
OCPB	Open Center with Power Beyond
CC	Closed Center
CCLS	Closed Center with Load Sensing

MC Series Stack Valves



- **A Complete Family of Stackable, Solenoid Controlled - Pilot Operated Valve Modules**
- **Open Center and Closed Center Versions Available for use with Fixed or Variable Displacement Pumps**
- **Flow Rates from 4 to 38 l/m (1 to 10 gpm)**
- **Maximum Inlet Flow of 95 l/m (25 gpm) with Unload Module**
- **Modular Design permits Maximum Application Flexibility from Standard Sections**
- **Valves may be Mounted in Any Orientation for Design Flexibility**
- **Maximum Operating Pressures to 220 bar (3200 psi)**

Available Modules and Functions Include:

MCSOV	2 position, 2 way, Pilot Operated Solenoid Valve
MC240	2 position, 4 way, Pilot Operated Spool Valve
MCPPV	3 position, 3 way, Pilot Operated Spool Valve
MCLF	3 position, 3 way, Direct Acting Solenoid Valve
MC340	3 position, 4 way, Pilot Operated Spool Valve
MC34X	3 position, 4 way, Pilot Operated Spool Valve with Pilot Operated Check Valves
MCUNV	Unload Valve, 2 position, 2 way
MCUNR	Unload Valve with Integral Relief, 2 position, 2 way
MCPRV	Pressure Reducing Valve
MCDPV	Demand Priority Valve with Integral Relief

For more detailed information, contact Sauer-Sundstrand Applications Engineering.

Complete System Capabilities

Integrated Hydrostatic Transaxle

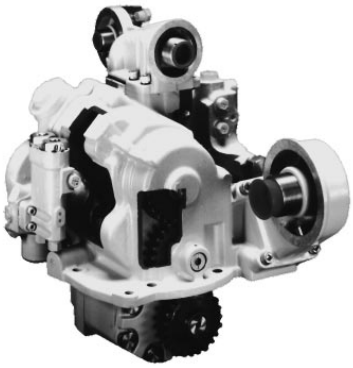
IHT-M15

- **Complete Propel and Auxiliary Power System for Your Machine in One Compact Package**
- **Infinitely Variable Speed in Both Forward and Reverse for Complete Operator Control**
- **PTO Controlled by an Electromagnetic Clutch / Brake Operating in Oil for Smooth Operation and Long Life**
- **Integral Hydraulic Circuit for Implement Services Reduces Design Complexity and Cost**
- **A Wide Range of Options to Complete your Power Train Design, All from a Single Source**

Integrated Hydrostatic Transaxle		Dimension	Transaxle Model **IHT-M15**
Max. Input Speed		min^{-1} (rpm)	3600
Overall Reduction	Single Speed	—	23.21:1 (27.3:1 optional)
	Two Speed	—	13.22:1 and 23.21:1 (13.22:1 and 27.3:1 optional)
Axle Torque	Intermittent	Nm lbf•ft	1700 1250
	Continuous	Nm lbf•ft	884 650
PTO Output Speed*		min^{-1} (rpm)	2000 (540 optional)
PTO Torque (540 PTO Option)	Intermittent	Nm lbf•in	1281 11 340
	Continuous	Nm lbf•in	1017 9000
Input Power*		kW hp	26 35

* Exact speed will vary depending on engine speed and available ratios.
** Installed engine power in a vehicle.
For more detailed information, refer to IHT-M15 brochure, BLN-10096.

Custom Solutions for Your Hydraulic Power System Needs



"CCLS" Custom Pump Package

Sauer-Sundstrand's custom component capabilities are demonstrated by this "CCLS" hydraulic pump package, which includes gear pumps, a pressure / flow compensated axial piston pump, filter pads, and associated valves. This integrated unit was specifically designed for an agricultural tractor.

Hydrostatic Pumps and Motors, Gear Pump, Electronic Microprocessor Control, and Sensor Package for "Dual Path" Vehicle

Sauer-Sundstrand can provide power transmission, open circuit hydraulic, and sensors / controls in complete system packages, such as the crawler vehicle package shown above.

Whatever your hydraulic power needs may be, let Sauer-Sundstrand be your single source!

Planetary Wheel and Track Drives

- **Modular Design permits Optimum Component Matching and System Performance**
- **7 Sauer-Sundstrand Hydrostatic Motor Frame Sizes may be Combined with 6 Fairfield Compact Wheel Drives and 4 Fairfield Compact Track Drives**
- **Designed for Shortest Installed Package**
- **Parking Brake with Full Input Torque Capability**
- **Series Planetary Gearing for High Efficiency**
- **Separate Oil Systems for Planetary Gear Box and Hydrostatic Motor**

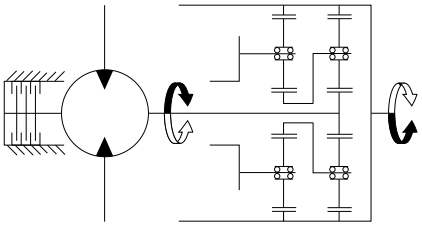
Sauer-Sundstrand Motors				Fairfield Planetary Drives									
				Compact Wheel Drives						Compact Track Drives			
Series	Frame Size	Displacement cm^3 (in^3)	Fixed or Variable	CW5*	CW8*	CW12	CW18	CW26	CW35	CT18	CT26	CT35	CT45
40	46	46 (2.80)	Variable			●	●			●	●	●	
90	042	42 (2.56)	Fixed	❍	❍	●	●			●	●	●	●
	042	42 (2.56)	Variable	❍	❍								
	055	55 (3.35)	Fixed		❍	●	●			●	●	●	●
	055	55 (3.35)	Variable			●	●	❍			●	●	●
	075	75 (4.57)	Fixed			●	●	❍			●	●	●
	075	75 (4.57)	Variable									●	●
51	080	80.7 (4.92)	Variable			●	●	❍			●	●	●
	110	109.9 (6.71)	Variable					❍	❍		●	●	●
	160	160.9 (9.82)	Variable						❍				
Max. Output Torque		Nm (000's)		5	8	12	18	26	35	18	26	35	45
		lbf•in (000's)		45	70	110	160	230	310	160	230	310	400
Max. Output Speed		min^{-1} (rpm)		330	250	200	180	120	120	80	80	80	80
Gear Ratio **				1	2	3	4	4	4	5	5	6	6

● = Available
❍ = In Development
* = With Integrated Motor

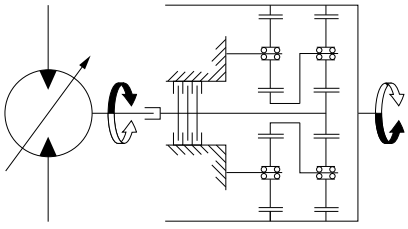
**1 16 - 19 - 30 - 36 : 1
2 26 - 33 - 40 - 50 : 1
3 18 - 22 - 27 - 35 - 42 - 51 : 1
4 26 - 36 - 42 - 51 : 1
5 59 - 71 - 80 - 85 - 96 - 110 - 124 - 131 : 1
6 63 - 69 - 79 - 85 - 95 - 110 - 117 - 136 : 1

Configuration Schematics

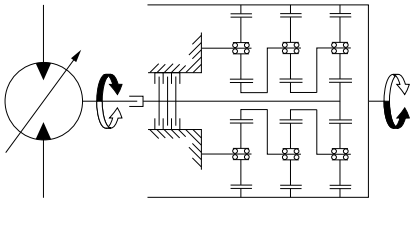
Compact Wheel Drive with Integrated Hydrostatic Motor (Drum or Multiple Disc Brake- Optional)



Compact Wheel Drive with Variable Hydrostatic Motor (Multiple Disc Brake- Optional)



Compact Track Drive with Variable Hydrostatic Motor (Multiple Disc Brake- Standard)



For more detailed information on Sauer-Sundstrand motors, refer to Series 40 Motors Technical Information BLN-9990, Series 51 Motors Technical Information BLN-10042, and Series 90 Motors Technical Information BLN-10030.
For more detailed information on Compact Drives, contact Fairfield Manufacturing Company at (317) 474-3474.

Sauer-Sundstrand's Global Capabilities Keep the World Moving With Controlled Hydraulic Power System Technology

Sauer-Sundstrand products are sold and serviced by a network of more than 250 Distributors and Authorized Service Center locations around the world. For the product support location nearest you, contact Sauer-Sundstrand at 515/239-6592, FAX 515/239-6318, or your nearest Sauer-Sundstrand distributor.

SAUER SUNDSTRAND

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