

# SECTION 5: 1926-1984 Vintage Models

S&S®

## CAMSHAFTS

### FOR 1954-'84 BIG TWINS WITH S&S VALVE TRAIN CONVERSION KIT

These camshafts are for 1954-'84 big twins with either the Hydraulic Conversion kit or the Cylinder Head Replacement kit for panhead engines. They are also replacement parts for Flathead Power® P-Series and SH-Series engines. Since these kits and engines include 1984-'99 style hydraulic lifters, the larger late style roller diameter requires that cams designed for 1984-'99 models must be used to achieve correct valve timing. When choosing a late style cam for this type of engine, be aware that, due to the approximate 1.5:1 rocker ratio of most aftermarket rocker arms for shovelheads, the total valve lift will be reduced by about 9% from the specified value. The specification chart shown here shows specs as used in a pan or shovel engine. These cams are available in generator and alternator styles.

Alternator style cams come with late '77-'84 style gears. '70-early '77 applications will require converting to the late style (late '77-'89) pinion gear.

#### FITMENT

- 1954-'65 engines with S&S Head Update kit
- 1966-'84 engines with Hydraulic Conversion kit
- P-Series and SH-Series engines
- Custom generator style engines with 1984-'99 style top end

#### FEATURES AND BENEFITS

- Quality construction — Made in-house by S&S Cycle in Viola, WI
- Higher lift and increased valve timing for better performance
- Quiet, dependable hydraulic valve train when used with S&S Hydraulic Conversion kits

#### CAM SPECIFICATIONS FOR 1954-'84 BIG TWIN ENGINES REQUIRING 1984-'99 STYLE CAMS

Cam Name	Application	Valve Timing <sup>1</sup>		Valve Duration		Valve Lift	Lift @ TDC <sup>2</sup>		Spring Spacing Required	Tappet Type Required
		Intake	Exhaust				Intake	Exhaust		
		Open BTDC/Close ABDC	Open BBDC/Close ATDC	Intake	Exhaust		Intake	Exhaust		
S&S 513	74" - 84" Stock or low compression	18°/38°	40°/18°	236°	238°	.472"	.163"	.187"	No	Hydraulic
S&S 585	74" - 80" engines 8.5:1 - 9.5:1 CR 84" - 93" engines up to 8:1 - 9:1 CR	20°/45°	60°/20°	245°	260°	.540"	.172"	.166"	Yes	Hydraulic
S&S 600	93" - 103" engines 9:1 - 10:1 CR	20°/55°	60°/20°	255°	260°	.554"	.177"	.170"	Yes	Hydraulic
S&S 631	High rpm cam for 93" - 103" engines 11:1+ CR	34°/61°	66°/29°	275°	275°	.581"	.359"	.204"	Yes	Solid or Hydraulic
S&S 640	93" - up engines 10:1 or greater compression	25°/60°	65°/20°	265°	265°	.590"	.205"	.192"	Yes	Hydraulic

<sup>1</sup>Timing designation is function of zero lash @ .053" off base circle.  
<sup>2</sup>Lifts at TDC are measured at the valve and are for reference only. Overlap valve lifts must be checked on assembled motor.  
Lifts based on 1.5:1 Rocker Ratio

#### S&S® CAMSHAFTS FOR 1954-'84 BIG TWIN ENGINES REQUIRING 1984-'99 STYLE CAMS

Cam Name	Application	Generator Part No.	MSRP	Alternator Part No.	MSRP	Tappet Type Required
S&S 513	74" - 84" Stock or low compression	<b>106-6028</b>	\$189.95	<b>106-6027</b>	\$189.95	Hydraulic
S&S 585	74" - 80" engines 8.5:1 - 9.5:1 CR 84" - 93" engines up to 8:1 - 9:1 CR	<b>33-5131</b>	\$189.95	<b>33-5109</b>	\$189.95	Hydraulic
S&S 600	93" - 103" engines 9:1 - 10:1 CR	<b>33-5132</b>	\$189.95	<b>33-5058</b>	\$189.95	Hydraulic
S&S 631	High rpm cam for 93" - 103" engines 11:1+ CR	<b>33-5078</b>	\$189.95	<b>33-5080</b>	\$189.95	Solid or Hydraulic
S&S 640	93" - up engines 10:1 or greater compression	<b>106-4639</b>	\$189.95	<b>33-5108</b>	\$189.95	Hydraulic

#### LATE STYLE CAM RECOMMENDATIONS FOR PANHEAD AND SHOVELHEAD ENGINES

Application	RPM range	Compression Ratio	If you used...	Then Use	Generator	Alternator
74" - Stock 84" low compression	Low - Mid 1500-4500 rpm	8.5 and below	S&S® 450 or Andrews® J or A	S&S 513	<b>106-6028</b>	<b>106-6027</b>
74" and 80" - Modified	Mid - High 3500-6000 rpm	8.5 - 9.5	S&S 514 or Andrews #3 or B	S&S 585	<b>33-5131</b>	<b>33-5109</b>
84" - 93"	Low - Mid 2500-5500 rpm	8.0 - 9.0	S&S 514	S&S 585	<b>33-5131</b>	<b>33-5109</b>
93" HC - 103"	Mid - High 3500-6000 rpm	9.0 - 10.0	S&S 495 or 560S	S&S 600	<b>33-5132</b>	<b>33-5058</b>
High Compression	High 3500-6500 rpm	Over 10.0	S&S 495 or 565S	S&S 640	<b>106-4639</b>	<b>33-5108</b>

In order to achieve stated timing specifications, these cams must be used in engines with 1984-'99 style tappets.

These cams should not be ordered as replacement parts for early S&S SH-Series engines, or for any shovelhead engine equipped with stock valve train. For replacement parts for these engines, select stock style cams and tappets.

S&S can do a special order cam, please contact your S&S customer service representative for more information

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