

SDSF Small Diameter Split Frame



Axial tool slide accessory
for socket weld removal



Wheel cutting module
accessory for FME cutting



Counterbore attachment
fits all models

Optimized for Low Clearance Environments

E.H. Wachs® SDSF Small Diameter Split Frames are the smallest, most compact member of the Wachs split frame family, and are designed for cutting, beveling and counterboring pipe and tubing from OD 0.5in - 6in (DN 15-150). Six models are available in 1in (25.4mm) increments, with additional sizes by special order.

Like all E.H. Wachs split frame clamshell style machines the SDSF is designed to “split” in half to fit over inline pipe, or can be slipped over open ended pipe. The SDSF serves as the basis of Wachs axial and radial socket weld removal kits that remove the weld filler metal without sacrificing the base material, an important consideration in complex assemblies.



SDSF Split Frame Features

Small Size, Big Capabilities

The SDSF is ideal anywhere pipe and tube are arrayed in tight places and finds many uses in power generation, oil and gas and the shipbuilding industries. Operating on air or electric power using standard Wachs motors and adapters, the SDSF is part of a complete system that includes a broad range of tool slides and accessories for maximum versatility. As with all E.H. Wachs products, the Small Diameter Split Frame is built with Wachs legendary quality and durability for years of reliable service.

Like all Wachs split frames the SDSF is designed to simultaneously cut and bevel pipe and tube with Wachs parting and beveling tool slides. It's also the basis of Wachs specialized Socket Weld Removal kits, in both axial and radial configurations.

Socket Weld Removal

SDSF split frames are the building block of Wachs socket weld removal machines. They're designed to remove couplers and elbows from existing piping systems by machining away the weld material that joins them. This is done without sacrificing the base material – a vital consideration in the repair or modification of complex process systems. These machines incorporate all that we've learned from years of socket weld removal experience. They're the easiest to use and most productive socket weld removal machines offered anywhere.

Foreign Material Exclusion (FME)

Wachs FME (Foreign Material Exclusion) is a chipless wheel cutting module designed for use with the SDSF. FME is critical in high purity and process applications where the introduction of chip debris cannot be tolerated. Examples include the food, dairy and pharmaceutical industries and the highly controlled power generation field.

Portable Pipe Cutting & Beveling

- SDSF quickly splits open to mount around the OD of inline pipe
- Machines carbon steel, stainless steel and alloys, e.g. Hastelloy™, Inconel™ and other high-performance materials
- Cuts and bevels up to 0.438in (11.1mm) wall thickness
- Low clearance design requires minimal space for setup and operation
- Self-squaring pipe clamping system, using either collets or integrated, close tolerance legs with wide feet stability
- Low friction adjustable bearing system provides maximum stability and extended machine life
- Fully enclosed bearing and drive gear system for operational safety
- Modular tool slides
- Lever type trip actuation for safety
- Spring loaded axial trip for crash resistance
- Improved radial trip geometry for crash resistance and durability
- Improved bearing adjustment design
- Improved durability in pinion gear bearing arrangement
- Easier assembly and disassembly of frame halves
- Improved sealing for chip exclusion
- Captive fasteners used for all accessories
- Reduced fastener count for simplified inventory. Only 3 hex wrench sizes required to operate machine
- Rings from 1-6in (DN 15-150) can mount with collets. Clamping feet can be used on 2in (DN30) and up



Front Drive Pinion



Bevel Prep



Socket Weld Removal



FME Wheel Cutting

SDSF Split Frame



UNIVERSAL RIGHT ANGLE DRIVE



ELECTRIC DRIVE



AXIAL FEED TRIP



RADIAL FEED TRIP

STANDARD
PINION



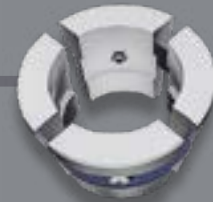
FRONT DRIVE
PINION



CENTERING LEGS & EXTENSIONS



SDSF
RING
SET



SELF-CENTERING COLLET



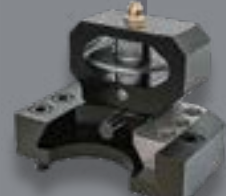
COUNTERBORE SLIDE



AXIAL SOCKET WELD
REMOVAL SLIDE



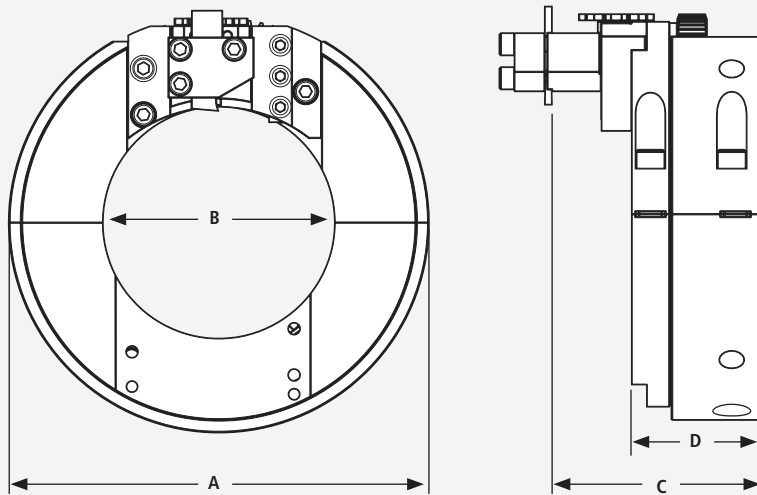
RADIAL SOCKET WELD
REMOVAL SLIDE



FME CHIPLESS CUTTING
WHEEL SLIDE

SDSF

SDSF Split Frame Specifications



SPECIFICATIONS	SDSF 1.0	SDSF 2.0	SDSF 3.0	SDSF 4.0	SDSF 5.0	SDSF 6.0
Machine Capacity OD	The machine capacity depends on the mounting system and on the operating method.					
"A" Machine OD	5in (127mm)	5.689in (145mm)	6.87in (175mm)	7.815in (199mm)	8.937in (227mm)	9.937in (252mm)
"B" Machine ID	1.563in (40mm)	2.626in (67mm)	3.75in (95mm)	4.752in (121mm)	5.878in (149mm)	6.878in (175mm)
"C" Parting line	3.469in (88mm)					
"D" Machine thickness	2.531in (64mm)					2.154in (55mm)

System Function:

Part off, bevel and counterbore pipe and tube; radial and axial socket weld removal; wheel cutting

Cutting tool surface speed:

10m/min, 2in 40sf/m 4in

Drive options: Pneumatic or electric

Air requirements:

35cfm at 90psi
(1m³/min at 6.2BAR)

Electrical requirements: 230/120V

Feed method: Starwheel

Feed rate: Fixed at 0.0031in (0.079mm) per trip

Construction: Alloy steel

Tool slide: Radial or axial feed, cut and bevel, counterbore, FME module

Tool stroke: 0.468in (11.9mm)

Finish: Hard chrome coating

Tooling: Axial or radial socket weld removal tooling, cut/bevel tooling. High speed steel or carbide

Packaging: Heavy duty carrying case

Optional Equipment

- Pneumatic or electric drive motor
 - Genuine Wachs Tooling
 - Axial feed tool slide
 - Radial feed tool slide set
 - Bench mount
 - Front drive pinion housing
 - Counterbore attachment
 - FME tool slide
 - Aluminum collet sets
 - Clamp pads sets
 - Radial socket weld slide
- Add frames, slides, collets, collet nut and spanner wrench, or clamping feet to complete machine.



SDSF Cut & Bevel



Axial Socket Weld Removal



SDSF Axial Turning



SDSF Counterbore Bevel

SDSF Split Frame Kits

SDSF Split Frame Ring Sets

Add slides, collets or legs*, drive, collet nut and spanner wrench for complete machine. See individual ring size accessory listings on the following pages.

Includes

- Individual Split Frame
- Pinion housing
- Heavy duty, watertight storage / carrying case
- Spare fastener kit
- Hand tools
- Manual

ITEM	PIPE OD	PART #
SDSF Split Frame 1.0*	1in (25mm)	80-4000-10
SDSF Split Frame 2.0	2in (51mm)	80-4000-20
SDSF Split Frame 3.0	3in (76mm)	80-4000-30
SDSF Split Frame 4.0	4in (102mm)	80-4000-40
SDSF Split Frame 5.0**	5in (127mm)	80-4000-50
SDSF Split Frame 6.0**	6in (152mm)	80-4000-60

* COLLET ONLY 1IN (25.4MM) AND BELOW. ** SPECIAL SIZES ON REQUEST.

SDSF Socket Weld Removal

For socket weld removal, available as radial or axial feed kits.

Includes

- Frame assemblies 1in and 2in (DN 25 and DN 50)
- Axial and/or radial feed socket weld removal tool slides
- Aluminum collets for pipes with Ø:
 - 0.5in / 0.75in / 1in / 1.25in / 1.5in / 2in (12.7 / 19.05 / 25.4 / 31.75 / 38.1 / 50.8mm)
- Clamp foot and extension leg kit for 2in (50.8mm) frame*
- 1 Air drive
- Spare fastener kit
- Storage case
- Operating hand tools
- Manual

ITEM	PIPE OD	PART #
SDSF Axial Feed Pneumatic Kit	0.5-2in (12.7-50.8mm)	80-0000-AX
SDSF Radial Feed Pneumatic Kit	0.5-2in (12.7-50.8mm)	80-0000-RA

*COLLET ONLY 1IN (25.4MM) AND BELOW.



Axial Slide for Socket Weld Removal



Wheel Cutting Module for FME Cutting



Standard Storage Case



Counterbore attachment fits all models

SDSF Tool Slide and Trip Assemblies

ITEM	PART #
Tool slide and trip assemblies for SDSF 1.0	
Tool slide and trip assemblies for SDSF 1.0 Radial feed parting tool slide	80-4101-10
Radial feed beveling tool slide	80-4102-10
Radial feed tool slide trip assembly For SDSF 1.0 to SDSF 6.0	80-4103-00
Radial feed tool slide kit includes: <ul style="list-style-type: none"> • 1 parting slide • 1 beveling slide • 1 trip assembly 	80-5101-10
Radial feed socket weld removal tool slide Used with the SDSF for removal of socket welds, the radial slide requires less axial clearance. The tooling is advanced to the pipe center line (radially) to remove the weld material. Also available as a complete Radial Socket Weld Removal Kit	80-4100-10
Axial feed socket weld removal tool slide Used with the SDSF for removal of socket welds, the axial slide requires less radial clearance. The tooling is advanced axially along the pipe to remove the weld material. Also available as a complete axial socket weld removal kit	80-4104-10
Axial feed tool slide trip assembly For SDSF 1.0 to SDSF 6.0	80-4105-00
Axial feed tool slide kit includes: <ul style="list-style-type: none"> • 1 axial slide • 1 trip assembly 	80-5102-10
Universal counterbore slide Designed for perfect counterboring of the pipe or tube inside diameter, the universal counterbore fits all Wachs SDSF ring set. Utilizes a simple and effective hand advance to precisely control the counterbore. For SDSF 1.0 to SDSF 6.0	80-4107-00
Tool slide and trip assemblies for SDSF 2.0	
Radial feed parting tool slide	80-4101-20
Radial feed beveling tool slide	80-4102-20
Radial feed tool slide trip assembly For SDSF 1.0 to SDSF 6.0	80-4103-0
Radial feed tool slide kit includes: <ul style="list-style-type: none"> • 1 parting slide • 1 beveling slide • 1 trip assembly 	80-5101-20
Radial feed socket weld removal tool slide	80-4100-20
Axial feed socket weld removal tool slide	80-4104-20
Axial feed tool slide trip assembly For SDSF 1.0 to SDSF 6.0	80-4105-00
Axial feed tool slide kit includes: <ul style="list-style-type: none"> • 1 axial slide • 1 trip assembly 	80-5102-20
Universal counterbore slide For SDSF 1.0 to SDSF 6.0	80-4107-00
Tool slide and trip assemblies for SDSF 3.0 & SDSF 4.0	
Radial feed parting tool slide	80-4101-40
Radial feed beveling tool slide	80-4102-40
Radial feed tool slide trip assembly	80-4103-00
Radial feed tool slide kit includes: <ul style="list-style-type: none"> • 1 parting slide • 1 beveling slide • 1 trip assembly 	80-5101-40
Trip assembly	80-4104-40



Radial Socket Weld Removal Slide



Axial Socket Weld Removal Slide



Counterbore Tool Slide



Radial Feed Tool Slide Kit

SDSF Split Frame Accessories

SDSF Tool Slide and Trip Assemblies

ITEM	PART #
Axial feed tool slide trip assembly For SDSF 1.0 to SDSF 6.0	80-4105-00
Axial feed tool slide kit includes <ul style="list-style-type: none"> • 1 axial slide • 1 trip assembly 	80-5102-40
Universal counterbore slide For SDSF 1.0 to SDSF 6.0	80-4107-00
Tool slide and trip assemblies for SDSF 5.0 and SDSF 6.0	
Radial feed parting tool slide	80-4101-60
Radial feed beveling tool slide	80-4102-60
Radial feed tool slide trip assembly For SDSF 1.0 to SDSF 6.0	80-4103-00
Radial feed tool slide kit includes <ul style="list-style-type: none"> • 1 parting slide • 1 beveling slide • 1 trip assembly 	80-5101-60
Axial feed socket weld removal tool slide	80-4104-60
Axial feed tool slide trip assembly For SDSF 1.0 to SDSF 6.0	80-4105-00
Axial feed tool slide kit includes <ul style="list-style-type: none"> • 1 axial slide • 1 trip assembly 	80-5102-60
FME (foreign material exclusion) slide	80-4106-60



FME (Foreign Material Exclusion) Slide



Parting tooling standard

SDSF Tooling

ITEM	DIMENSIONS	LENGTH	PART #
Parting Tooling			
Low clearance	1/8 x .5in (3.2 x 12.7mm)	1.63in (41.4mm)	80-7001-01
Standard		2.13in (54.1mm)	80-7001-02
Extended reach		2.63in (66.8mm)	80-7001-03
Bevel Tooling			
Standard 37.5°	3/8 x .5in (9.5 x 12.7mm)	2.13in (54.1mm)	52-710-02
Extended reach 37.5°		2.63in (66.8mm)	52-710-03
Extended reach 30°		2.67in (67.8mm)	52-705-01
Extended reach 45°			52-705-03
Low clearance 37.5°, outside		1.63in (41.4mm)	80-7008-01
Standard 37.5°, outside		2.13in (54.1mm)	80-7008-02
Universal Counterbore Tool			
Counterbore tool taper 4:1 (14°)	-	-	80-7003-01
Socket Weld Removal Tooling, Radial Feed			
Standard, radial	-	-	80-7006-01
Extended reach, radial	-	-	80-7006-02
Low clearance, radial	-	-	80-7006-03
Socket Weld Removal Tooling, Axial Feed			
Standard, axial	3/8 x 3/8in (9.5 x 9.5mm)	2.0in (50.8mm)	80-7007-02
Standard, HSS tool bit, axial For single point facing, beveling and flange facing For use with EP 424, LCSF, FF, SWR and SDSF machines			52-701-01
Standard, axial. Offset dogleg. With 1in (25.4mm) extension		1.5in (38.1mm)	52-701-02
Standard, carbide, axial		1.0in (25.4mm)	52-702-01
Extended reach, axial		2.5in (63.5mm)	80-7007-03
Extended reach, axial. Offset dogleg. With 1 1/4in (31.8mm) extension			52-701-03
FME chipless cutting wheel			80-0053-00



Bevel tooling extended reach 30°



Counterbore tool taper 4:1



FME cutting wheel

SDSF Split Frame Accessories

SDSF Aluminum Collets & Collet Accessories

Please specify when ordering customized tools:

Pipe/tube true OD, material (aluminum, delrin, stainless), collet size markings

COLLETS REQUIRE COLLET NUT AND SPANNER WRENCH WHEN PURCHASED WITH INDIVIDUAL SDSF MACHINE.

ITEM	PART #
Customized aluminum collets for SDSF 1.0-SDSF 6.0	ON REQUEST
Collet kit for SDSF 1.0 Includes: <ul style="list-style-type: none"> Aluminum collets for pipe OD: 0.5in, 0.75in, 1in (12.7, 19.05, 25.4mm) 1 collet nut 1 spanner wrench 	80-5201-10
Collet kit for SDSF 2.0 Includes: <ul style="list-style-type: none"> Aluminum collets for 1.25in, 1.5in, 2in (31.75, 38.1, 50.8mm) Pipe OD 1 collet nut 1 spanner wrench 	80-5201-20
Collet kit for SDSF 3.0 Includes: <ul style="list-style-type: none"> Aluminum collets for 2in, 2.5in, 3in (50.8, 63.5, 76.2mm) Pipe OD 1 collet nut 1 spanner wrench 	80-5201-30
Collet kit for SDSF 4.0 Includes: <ul style="list-style-type: none"> Aluminum collets for 3in, 3.5in, 4in (76.2, 88.9, 101.6mm) Pipe OD 1 collet nut 1 spanner wrench 	80-5201-40
Collet kit for SDSF 5.0 Includes: <ul style="list-style-type: none"> Aluminum collets for pipe OD: 4in, 5in (101.6, 127.0mm) 1 collet nut 1 spanner wrench 	80-5201-50
Collet kit for SDSF 6.0 Includes: <ul style="list-style-type: none"> Aluminum collets for pipe OD: 5in, 6in (127.0, 152.4mm) 1 collet nut 1 spanner wrench 	80-5201-60
Collet nut for SDSF 1.0	80-0007-10
Collet nut for SDSF 2.0	80-0007-20
Collet nut for SDSF 3.0	80-0007-30
Collet nut for SDSF 4.0	80-0007-40
Collet nut for SDSF 5.0	80-0007-50
Collet nut for SDSF 6.0	80-0007-60
Spanner wrench for SDSF 1.0 to SDSF 2.0	90-800-78
Spanner wrench for SDSF 3.0 to SDSF 4.0	90-800-79
Spanner wrench for SDSF 5.0 to SDSF 6.0	90-800-80



Aluminum Collet



Collet Nut for SDSF



Spanner Wrench for SDSF

SDSF Split Frame Accessories

SDSF Motors & Miscellaneous Accessories

ITEM	1.0	2.0	3.0	4.0	5.0	6.0	PART #
Clamp foot and extension leg set Includes: 4 each clamp foot 80 4001 00 4 each extension legs 0.31in (7.9mm) 4 each extension legs 0.56in (14.2mm)		X	X	X	X	X	80-5001-00
Universal right angle air drive motor	X	X	X	X			80-4004-00
Electric motor For SDSF 120V 1500W	X	X	X	X	X	X	80-4005-01
Electric motor For SDSF 230V 1500W	X	X	X	X	X	X	80-4006-01
Front drive pinion housing assembly	X						80-4003-10
		X					80-4003-20
			X				80-4003-30
				X			80-4003-40
					X		80-4003-50
						X	80-4003-60
Universal spare fastener kit.*	X	X	X	X	X	X	80-5500-00
Axial feed tool slide trip assembly	X	X	X	X	X	X	80-4003-30
Universal manual	X	X	X	X	X	X	80-MAN-01
Bevel slide cover assembly. For use with outside bevel tooling	X	X	X	X	X	X	80-4108-00

* KIT BOM'S SUBJECT TO CHANGE BASED ON CURRENT PRODUCTION CONFIGURATION

Cutting Lubrication

Water soluble, biodegradable, non-hazardous, fully synthetic cooling fluid that extends the tooling life.

DESCRIPTION	VERSION	WEIGHT	PART #
Cutting lubrication KSS-TOP	Pump sprayer with 500ml	1.39lb (630g)	0T790.060.226
Cutting lubrication KSS-TOP refill canister	Canister with 10l	24.25lb (11kg)	0T790.060.227



Clamp Foot & Extension Leg Set



Universal Pneumatic Right Angle Drive Motor



Electric Motor for SDSF



Cutting lubrication KSS-TOP