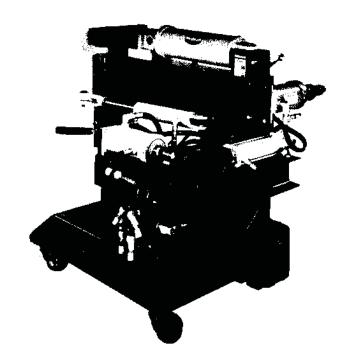
# TUBE BENDER

# KEEP NEAR MACHINE AT ALL TIMES

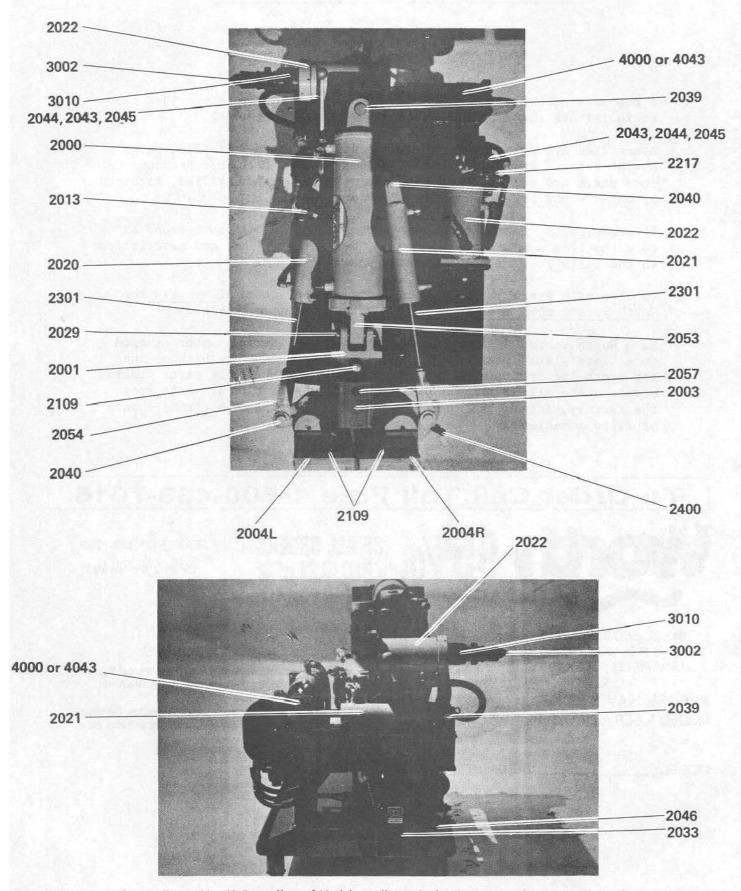


"THE ORIGINAL IN QUALITY AND DEPENDABILITY"

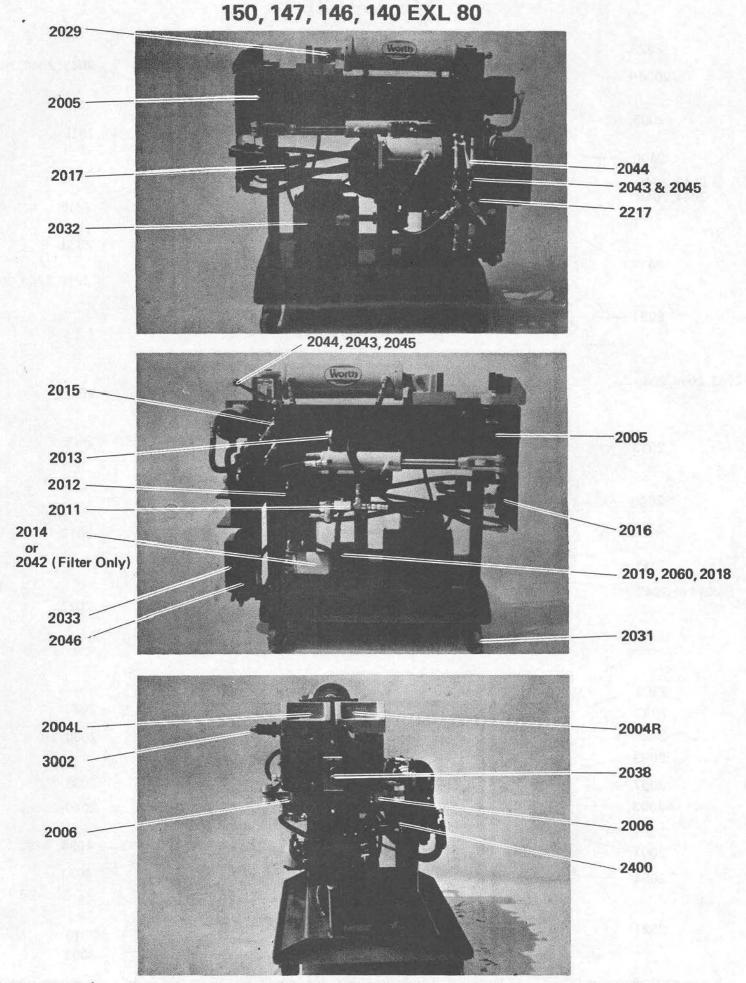


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### 150, 147, 146, 140 EXL 80

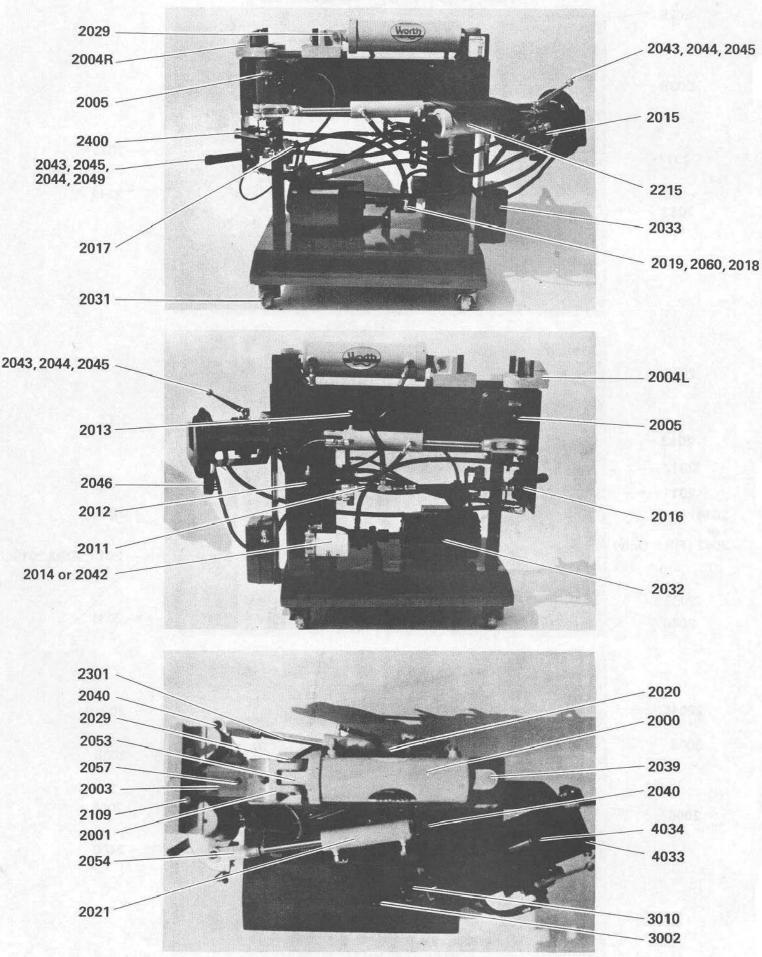


For Parts I.D., Reference Pages 54 - 59 Regardless of Model, as all 100 Series Frames are the same. Also, refer to Dealer Reference Guide "Tube Bender Parts and Accessories" on following pages.



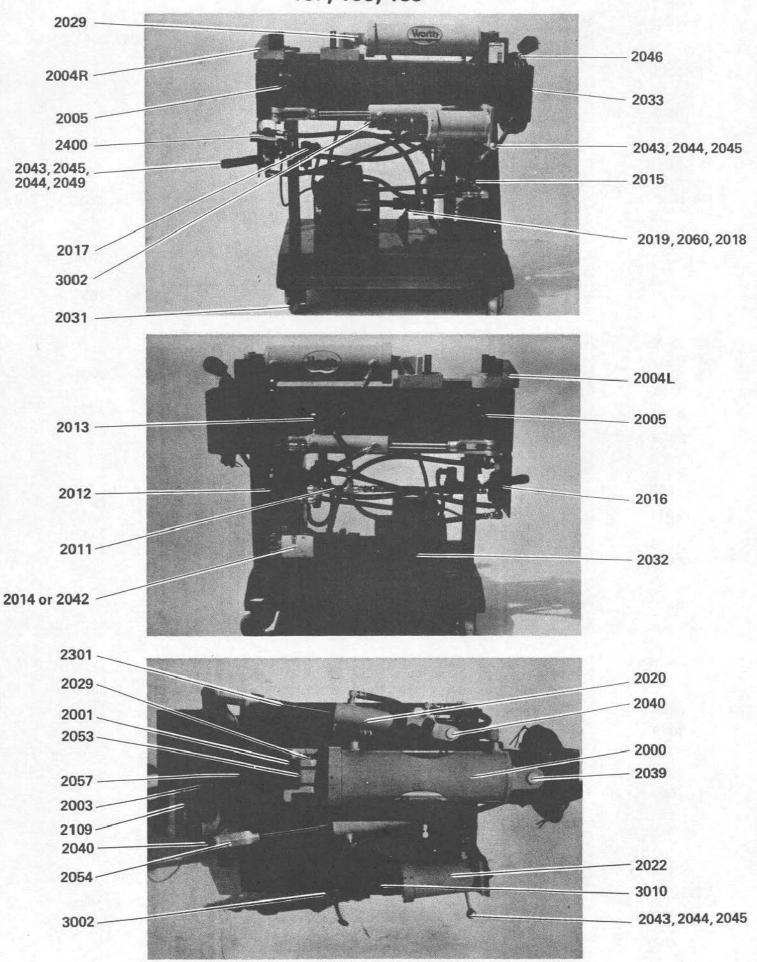
for Parts I.D., Reference Pages 54 - 59 Regardless of Model, as all 100 Series Frames are the same. Also, refer to Dealer Reference duide "Tube Bender Parts and Accessories" on following pages. 55

### 145, 139 EXL 60



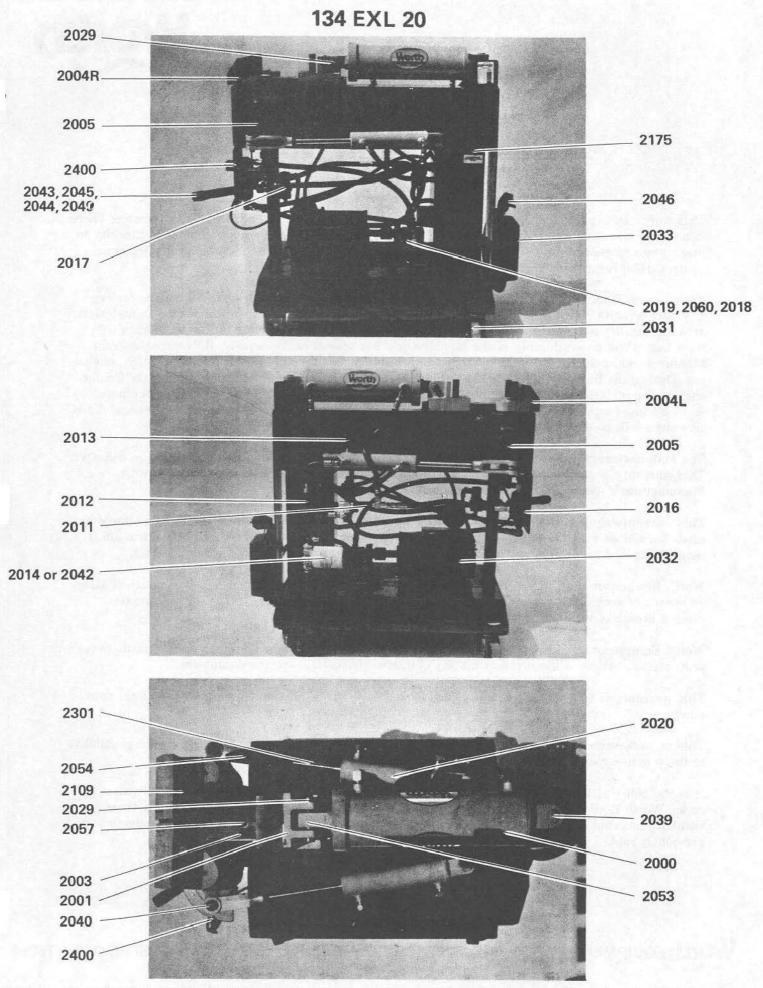
For Parts I.D., Reference Pages 54 - 59 Regardless of Model, as all 100 Series Frames are the same. Also, refer to Dealer Reference Guide "Tube Bender Parts and Accessories" on following pages. 56

137, 136, 135



For Parts I.D., Reference Pages 54 - 59 Regardless of Model, as all 100 Series Frames are the same. Also, refer to Dealer Reference Guide "Tube Bender Parts and Accessories" on following pages. 57

For Parts I.D., Reference Pages 54 - 59 Regardless of Model, as all 100 Series Frames are the same. Also, refer to Dealer Reference Guide "Tube Bender Parts and Accessories" on following pages 58



For Parts I.D., Reference Pages 54 - 59 Regardless of Model, as all 100 Series Frames are the same. Also, refer to Dealer Reference Guide "Tube Bender Parts and Accessories" on following pages. 59



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## TUBE BENDER PARTS AND ACCESSORIES

#### "COMP-U-BEND" PART NO. 2249

This is the finest-most advanced computer for a tube bender available.

- . Simply by entering a 5 digit part no., the detailed step-by-step instructions, such as, die size, pipe size, tube length, and length between bends, will be displayed by the computer to lead the operator through the pipe fabrication. With Comp-U-Bend there is no need to take data cards/notebook or paper or any kind to the machine!!
- · A built in tone alarm alerts the operator of any unusual conditions such as rotation of tube or change of die size.
- Infrared encoders automatically insure depth of bend accuracy to within plus or minus 1 degree even with the accumulation of dust, dirt and grime.
- Exclusive electronic "Tube Vice" lets the operator clamp any size tube and hold it securely in place (without bending) allowing such operations as marking length between bends or to cut off tube. As this feature is totally electronic, there are no springs or hinges to wear out.
- Over 200 of the most popular pipes can be preprogrammed into the computer at the factory.
- . A minimum of 100 or more additional pipes can be programmed into the computer by the operator.
- Built in 10 year battery to hold program in memory during periods when power is off.
- Manual mode of operation allows the operator to override the computer in order to pattern bend the tube for custom exhaust work.
- High durability membrane touch switches are incorporated in the unit to insure high reliability.



#### TRAINING TAPES

Exclusive video tape program further separates Worth from the competition.

Tapes provide several hours training including . . . machine operation and maintenance, under car installation techniques,



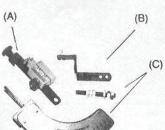
proven methods of successful exhaust repair marketing. Also, includes comprehensive test to verify new employee proficiency and high quality certificate(s) of achievement suitable for framing, V.H.S. format PART NO. G2107.

#### BENDING DATA WORKBOOK

Bound in a heavy pressboard binder and printed in a book form on 81/2"x11" cardstock. There is data on both sides with over three thousand applications printed in Maremont numbering order and shipped with the latest Maremont catalog set to assist in locating the various bending sheets as required. Depth of Bend Scale for auto-cut off and angle dial required. PART NO. 2100.







#### **DEPTH OF BEND** SCALE/CUT OFF SWITCH KIT

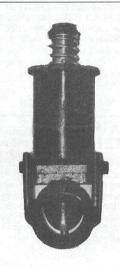
Complete Assembly P/N #2400 Provides for both manual setting for data bending and "hands off" monitoring for pattern or "mirror" bending. There is only one scale to read regardless of which method of reading the scale is used. Can be fitted on all older models in as little as 15 minutes. Has instruction manual complete with pictures to assist in installation

(A) Micro Switch, Pointer, Handle Assembly	P/N #2410
(B) Switch Stop Bracket Assembly	P/N #2420
(C) Radius Scale Casting Stud Hex Nut Assembly	P/N #2440

#### "TUBE "NOTCHER"

Designed to produce "Y" and "T" connections for V-8 engine cross-over pipes. Contains a shear activated by the hydraulic swager cylinder on those benders equipped to swage. Will notch one or both sides of the end of an AK tube. Is available for either 2" or 21/4" tubing. The "barrel" portion of the notcher is 3" O.D. and clamps into the collets of any swager with 3" capacity.

	PART NO
2"	2250
21/4"	2251



#### **HYDRAULIC VALVES**

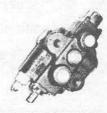
These directional control valves provide good metering characteristics and long dependable service life. Balanced spools are select-fit for minimum leakage and load holding checks prevent load drop when shifting.

Features • Integral load holding check valves (prevent reverse flow through valve when shifting)

- Integral differential poppet type relief valve, adjustable (set at 2000 psi, 10 gpm)
- · External spool seals (permit easy replacement, reduced maintenance cost)
- · Body material is high tensile strength cast iron
- · Spool material is ground, plated and polished steel



SWAGE VALVE #2015



BENDING VALVE #2016 \*CARTRIDGE #2047



DOUBLE VALVE #2217 \*CARTRIDGE #2047

HANDLE BRACKET #2043 HANDLE PIN KIT #2045 HANDLE #2044 PIPE INSULATION #2049

(For Handle)



#### HYDRAULIC **CYLINDERS**

Features . Cylinder barrels are precision honed to provide long seal life.

- · Rods are hardened, chrome plated and polished for long wear life and for protection from external damage and corrosion
- · Rod wipers clean dirt and foreign matter from rod to insure long seal life
- · Welded type cylinders have been designed for continuous operation at maximum pressures
- · Rod type cylinders (clamp down swager) provide reliable operation due to high quality materials and workmanship



TOP CYLINDER #2000 **SEAL KIT #2025** ROD #2303



DOUBLE CYLINDER #2215 **SEAL KIT #2304** ROD #2305



SWAGE/EXP. CYL #2022 SEAL KIT #2026 ROD #2302



RIGHT SIDE CYL. #2021 SEAL KIT #2024 ROD #2301



LEFT SIDE CYL. #2020 SEAL KIT #2024 ROD #2301

#### HYDRAULIC **GEAR PUMPS**

Quality materials and precision manufacturing are used in every pump with the following material as standard.

Features . Head, casing and bracket are cast iron

- · Gears are heat treated powdered metal
- Shaft Case hardened steel w/woodruff key drive.
- Bearing anti-friction, needle
- · Sound levels iron housing and involute spur gears generate sound levels as low as 62 -67 db (A).





GEAR PUMP #2019

Pump Bracket #2060

Coupling (Pump To Motor) Including Rubber Syder #2018

#### **HYDRAULIC CHECK VALVES**

Provides positive operation on only slight differential pressure. Full flow is permitted in the direction of the arrow; positive check in the opposite direction. Stainless steel ball check is standard.



CHECK VALVE #2011

#### **HYDRAULIC** RELIEF VALVES

Differential-poppet type relief valves designed to give long life and smooth performance at an economical price. The hydraulically dampened poppet uses differential areas to provide minimum variation between opening and full flow pressures.



RELIEF VALVE #2012 CARTRIDGE #2048

### HYDRAULIC Designed for **FILTERS**

use with petroleum base fluids;

if the filter becomes clogged with contamination before changing, the bypass valve (a safety feature) opens at the pre-set pressure, preventing pump cavitation (suction line) or collapse of the element (return line). Filters are sized to handle the maximum flow at it's position in the system.

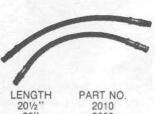


FILTER & BRACKET #2014 FILTER ONLY #2042

HYDRAULIC Hoses constructed of an inner tube of black, seamless oil and heat-resistant synthetic rubber with an outer cover of black synthetic rubber formulated for oil, abrasion and weather

Features • SAE 100R 1-1 wire braid

- Temperature range: -40° to 200°F
- · Designed for medium high pressure
- Meets or exceeds SAE specifications

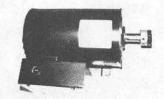


22' 2009 35" 2008 46 2007 57' 2216

### DEALER REFERENCE GUIDE PARTS AND ACCESSORIES

# **MOTORS**

- ELECTRIC Unique cooling system features double cooling action; air is drawn in on the shaft end. over the windings and out the opposite end where an external cooling force directs the air back over the shell of the motor.
  - · VPI insulation system insures resistance to vibration, moisture and abrasives.
  - · Rotors are dynamically balanced to minimize vibration and insure long bearing life
  - · Copper windings & leads are used for higher efficiencies and reliable service.
  - · Stators are impregnated under vacuum and pressure. STD. = 5 H.P., 220V, 60HZ, 1 0, PART #2032 OPT. = 5 H.P., 220V/440V, 60HZ, 3 Ø, PART #2306 INTERNATIONAL = 5 H.P., 50HZ, ALL VOLTAGES PART #2307 OLD STYLE = 3 H.P., 60HZ, 10, PART #2308

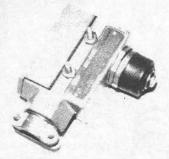


#### **ELECTRIC LIMIT & ENCLOSED SWITCHES**

These industrial position sensing switches are the standards of excellence in both design and manufacture. These are the mechanically operated, metal-enclosed switches industry has traditionally relied upon in demanding applications.

Features • Temperature range -25°F to +160°F • Cast aluminum housing • Grounding screw • UL and CSA listed

DEPTH OF BEND "MICRO SWITCH" (NEW STYLE) **PART NO. 2037** 



DEPTH OF BEND "MICRO SWITCH" (OLD STYLE) PART NO. 2300

> ELECT. WIRE (OLD & NEW) **PART NO. 2030**

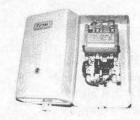
# ELECTRIC

Magnetic Starters provide full voltage, across the line, start-stop control of electric motors. They include thermal relays which, together with the proper heater elements, protect motor windings from harmful currents and resultant temperature rise caused by (1) overloading STARTERS the motor, (2) sustained low line voltage and (3) stalled rotor.

· Dual-voltage, dual frequency coils · Silver-cadmium oxide contacts

. Trip-free overload relays. Designed to trip out on sustained overload but not on the high starting currents of normal operations

5 HP - PART #2033 3 HP - PART #2309



## ELECTRIC **VALVES**

WITH HYD. MANIFOLD

Feature patented plasticmolded coils for protection SOLENOID against humidity, dirt and fungus.

> COMPLETE UNIT **PART NO. 2017**



### SLIDE - PART NO. 2001 **HOLDS RADIUS** (PUSHER) DIES

Urethane Sleeves Eliminate Friction in Die Transport System



(0-2000 PSI) PART NO. 2013

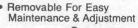
HYDRAULIC Monitors Side Cyl. Pressure (Wiper Die Resistance Against Ram Die). Can also be installed to monitor top cyl. pressure (Radius die).



#### SLIDE PLATE AND SCREWS • Removable For Easy



PLATE PART NO. 2003





SCREWS (3) PART NO. 2057

### START/STOP SWITCH

PART NO. 2038



VENTS

PART NO. 2175

BREATHER Provides vacuum relief and pressure equalization on gear box and oil tank. Constructed of brass and bronze



PART NO. 2053

ROD EYE . Connects Top Cyl. to Slide



#### SLIP PINS (W/COTTER PINS)

TOP CYL.-REAR



P.N. 2039



P.N. 2029



P.N. 2040

#### DRUP-UN DIES" CONVERSION KIT

Designed to convert standard bolt on dies to "drop on" type. Consists of shoulder bolts which screw into threaded die bolt holds. Bolt down style dies can quickly be drilled to accommodate larger shoulder bolts on any drill press. PART NO. 2109.



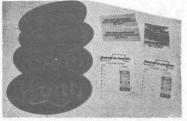
#### "QUICK SLIP" SWAGER TOOLING CONVERSION KIT

Converts standard screw-on swager tooling to quick connect type. Kit contains one cyl. rod slip adaptor, 6-tool thread adaptors, one 11/2" slip ram w/flare adaptor and one 45/90 head pipe flare. PART NO. 2108



#### STICKER REPLACEMENT KIT

PART NO. 2055



#### BEARING HOUSING

Holds Upper Wiper Arm.

NOTE: Must be welded on. **PART NO. 2005** 



#### EXPANDER BARREL

**Exclusive Worth** design features color coded "Stops" for exact expanding. Has large-exposed thread design eliminates jamming and provides for easy cleaning. P.N. #3010



#### TOP CYL. TOOL TRAY

Keeps most used tools close to bending area. PART NO: 2190



#### CLAMP **JAWS**

PART NO. Std. P.N.# 4000 (11/2-27/2)-Heat treated (3") P/N# 4043



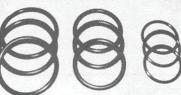
#### HEX TYPE DIE BOLTS

(Bolt-down style) 5/8-11x21/2 **PART NO. 2041** 



#### O-RING SET FOR EXPANDER TOOLING

Includes O-Rings in all 3 sizes/29 rings in all PART NO: 2103



#### DEPTH GAUGE

SIDE CYL. MOUNT Rack & Pinion gear design complete unit - P/N# 2068 Plastic cover only P/N# 2074



#### SWITCH HOLDER

Side cyl. mount holds old style micro switch for depth of bend.



**PART NO. 2036** 

#### **CLEVIS** CONNECT SIDE CYLINDERS TO LOWER ARMS PART NO.: 2054



#### "RIGID" PIPE/ **TUBE CUTTER**

Stands seconds to none in quality & dependability. Complete unit-P.N. #2102 Heavy duty blade-#2105 Screw #2106



#### CASTERS

Designed to last a lifetime, these heavy duty casters have a load rating based upon manual operation of 3 to 5 mph over even floors. Anti-friction bearings are quieter and make it easier to start and maintain motion. Metal wheels are used to combat adverse floor conditions (metal chips, uneven surfaces, extreme cold/heat, etc... .). 4-swivel mounting arrangement is great for maneuverability and ideal for confined areas. P/N# 2031

Founded in 1947, Worth has been mechaniz-

ing auto service for over a quarter of a century.

You probably have heard of Worth as it is the

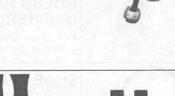
pioneer in the field of tube forming for

automotive exhaust and a leader in above

# CLEVIS/LOWER ARM BUSHINGS



Each Clevis has 2 and each lower arm has 1, for a total of 6 bushings on every bender PART NO.: 204A



#### LOWER ARM

Connects to upper wiper arm assembly PART NO.: 2006



### ground automotive lifts.









### WIPER DIE ARM (Upper)

PART NO. Mounts inside bearing housing. Holds wiper (back shoe) dies in place Left Right 2004R



### DISTRIBUTED BY:

LOWER ARM KEY 5/8"x5/8"x11/2" C.R.S. PART NO.: 2061



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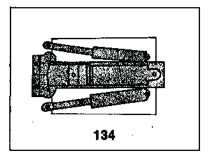


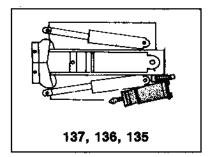
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## "100 SERIES" TUBE BENDERS

#### **TOP VIEWS**





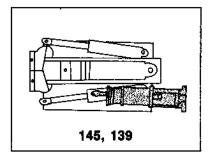
145

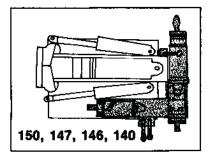
139

150 147

146

140





#### "100 SERIES" BENDERS — FEATURES FOR MODEL SELECTION

"Good Bender" - This is the strongest bender on the market today. Includes bending machine with 10" steel "H" beam and 5/8" steel side plates for main frame construction (not square tubing). The main frame is mounted on a 5/16" formed steel plate (not sheet metal). The wiper dies are actuated by two individual hydraulic pistons (no chains to break). The open center hydraulic valves continuously circulate seven gallons of fluid. This is a WORTH exclusive and allows for 24 hour operation without excessive heat buildup. Has 1/4" O.D. to 3" O.D. tube bending capacity. Has newly designed automatic depth control which utilizes only one scale for manual or data card bending.

"Better Bender" - Same main frame as 134 plus adjustable barrel hydraulic expander feature. This feature does all your tube sizing easily and accurately with the color coded adjustable barrel assembly. The barrel expander quickly forms inside and outside diameter expansions on muffler nipples and tube ends. Tooling is also available for 45/90° flaring and male/female ball joints. This model is very popular as it will create manifold flanges in the middle of a bend.

- "Premium Bender" - Same main frame as 134 plus double ended hydraulic swager/expander feature in one unit. This feature utilizes a single hydraulic cylinder equipped with two shafts. One shaft performs the swager function which quickly forms deep slip connections, 45/90° flares, ball joints, one piece manifold flanges and reductions. This swager utilizes newly designed hinged adaptor collars to slip tubing in and out. This unique "clampless swager" design eliminates break over jaws, handles and knobs. Simply drop the hinged collars over the tube then place into the clamp. As pressure is exerted against the tube the collars grip to perform a slip free swage. The other shaft quickly forms. I.D. and O.D. expansions on muffler nipples and tube ends. Includes same color coded adjustable barrel as 137. A single hydraulic cylinder equipped with two shafts is recognized as the economical alternative to Model 140.

- "Best Bender" - Same main frame as 134 plus same adjustable barrel hydraulic expander feature as 137 plus independently operated, hydraulically clamped down swager feature. This special feature is a WORTH exclusive and assures the fastest, trouble free swaging operation available. Fully hydraulic clamp down swager utilizes one cylinder to clamp and hold the tube. This eliminates guess work and assures equal pressure distribution around pipe. Another hydraulic cylinder is used to perform the ram swaging functions. This feature also has its own main frame assembly which utilizes two 5" "H" beams and 5/8" steel side plates. There are a total of six individual hydraulic cylinders which perform bending, swaging, clamping, and expanding functions.

See Next Page For Tooling Inventories By Model

## **QUICK REFERENCE GUIDE**

#### **BENDING DIES**

RADIUS	DIES (Bumpe	r/Pusher)	1.	///////////////////////////////////////									
PART #	RADIUS	TUBE SIZE	1			2/3	<u>/</u> §	2/8	<u> </u>	\ <u>{</u>		3/ <u>3</u>	3/3
10-5015	3	11/2	.•	•	٠	•	٠	•	•	•			
10-5016	4	11/2	•				٠	•	•				
10-5023	3	1¾	•				٠	•	٠				
10-5024	4	134	•	•	•	٠	•	•	٠	•	•		
10-5025	5	1%	•				•	•	•				
10-5028	4	1-7/8	•			•	٠	•	•				
10-5029	5	1-7/8	•				•	•	•				
10-5032	3	2	•	•	•	•	٠	•	•	•	•		
10-5033	4	2	•	•	•	•	•	•	•	•	•		
10-5034	5	2	•				٠	•	•				
10-5037	4	21/4	•	•	٠	•	٠	•	•	•	•		
10-5038	5	21/4	•				٠	•	•				
10-5042	5	21/2	•	•	٠	•	•	•	•	•			
10-5047	6	3	•	•									Γ
WIPE	DIES (Back	shoes)											
PART #	DIE LENGTH	TUBE SIZE											
10-5017	(2) FULL	11/2	•	•	•	•	٠	•	•	•	<u> </u>		T
10-5018	HALF	11/2	•	•	•	•	•	•	•	•			
10-5026	(2) FULL	13/4	•	•	•	•	•	٠	•	•	•		
10-5027	HALF	13/4	•	•	•	•	•	•	•	•	•		T
10-5030	(2) FULL	1-7/8	•		Г	•	٠	•	•	T		· · ·	<u> </u>
10-5031	HALF	1-7/8	•		Г	•	•	•	•	T-			T-
10-5035	(2) FULL	2		•	•	•	٠	•	•	•	•		
10-5038	HALF	2	•	•	•	•	•	•	•	•	•		
10-5039	(2) FULL	21/4	•	•	•	٠	•	•	•	•	•		
	<del></del>	-21/4	•				•		•				
10-5041	3/4	- E 74			_		T	T		_			1
10-5041 10-5040	3¼ HALF	21/4	•	•	٠	٠	٠	•	•	•	•		L
			•	•	•	•	•	•	•	•	•		
10-5040	HALF	21/4	1	-		H			-	1	•		

#### **END FINISHING TOOLS**

EXP	EXPANDER TOOLING													
	(Segment)		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\											
PART #	TYPE	TUBE SIZE	1	<u>%</u>					<u>}</u>	<u> Z</u> :	9/¢	3/3	<u> </u>	7
10-3003	ARBOR	11/2-3	٠	٠	•	•	٠	•	•	•	•		٠	
10-3010	Adj Barrel	ı	•	•	•	•	٠	•	٠	•	•		٠	
10-3005	Deep Slip	11/2	•	•	•	٠	٠	•	•	•	•		٠	
10-3006	Deep Slip	134	•	٠	•	•	٠	•	•	•	•		٠	
10-3007	Deep Slip	1-7/8-2	•	•	•	•	•	•	•	•	•		٠	
10-3008	Deep Slip	21/4-21/2	•	•	•	•	•	•	•	•	•		•	
10-3009	Deep Slip	3												
10-3012	45 Flare	11/2												
10-3014	45 Flare	134							•	•				
10-3015	45 Flare	2	•	•	•		٠	•	٠	•				
10-3016	45 Flare	21/4	•	•	•	111.12	٠		•	•				
10-3017	45 Flare	21/2								L				
10-3018	Male Ball	134												
10-3020	Male Ball	2	•				•	Γ	•	Γ				
10-3022	Male Bail	21/4	•	•	•		٠		•	•	П			
·· 10-3024	Male Ball	21/2	•				•		•	$\Gamma$		П		
10-3019	Female Ball	1¾						Ī			Γ			
10-3021	Female Ball	2	•				•		٠					
10-3023	Female Ball	21/4	•	•	•		٠		٠	٠				
10-3025	Female Ball	21/2	•				•		•	Ι				

#### **END FINISHING TOOLS**

SY	AGER TOOL	ING	1	Γ	7	7	7	7
	(Solid)		re \\2\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\					1
PART #	TYPE	TUBE SIZE	/4	/\	/:	2/3	<u> </u>	?/{
10-4000	JAWS	11/2-3	•	•	•		٠	
10-4001	Collets	11/2	•	•	•			
10-4003	Collets	1¾	•	٠	•		٠	
10-4005	Collets	1-7/8	•				٠	
10-4007	Collets	2	•	•	٠	<u> </u>		
10-4009	Collets	21/4	•	•	•		•	
10-4011	Collets	21/2	•	٠	•		•	
10-4026	Hinged Collar	11/2				•		٠
10-4027	Hinged Collar	13/4	L.			•		٠
10-4028	Hinged Collar	1-7/8				•		٠
10-4029	Hinged Collar	2				•		٠
10-4030	Hinged Collar	2¼				•		٠
10-4031	Hinged Collar	21/2	Г			•		•
10-4033	Collar Holders					•		٠
10-4034	Slip Adaptor					•		٠
10-4035	SLIP RAM/ Male Ball	2/13/4	•	٠	•	•	•	•
10-4036	Silp Ram/ Male Ball	21/4/2	•	•	•	•	•	•
10-4037	Slip Rem/ Male Ball	21/2/21/4	•	•	•	•	•	•
10-4038	Male Ball	21/2		Г		Г		٠
10-4039	Female Ball	134-21/2						•
10-4040	Doming Die	1%-21/2		Г				•
10-4041	Hdr. Collector	21/4/21/2				Π		
10-4042	Manifold Flange	2	•	•	•	•	٠	•
10-4043	Manifold Flange	21/4		_				
10-4014	45/90 Head Pipe Tool	_	•	•	•	•	•	•
10-4002	Ram	11/2	•	•	•	•	•	•
10-4003	Ram	13/4	•	•	•	•	•	٠
10-4006	Ram	1-7/8	•				•	•
10-4013	Ram	3	•	•				
10-4016	Reducer	11/2	•				•	
10-4017	Reducer	13/4	•				•	
10-4018	Reducer	1-7/8					•	
10-4019	Reducer	2	•	•	•		•	
10-4020	Reducer	21/4	•	•	•			Г
10-4021	Reducer	21/2	•				٠	Γ
10-4022	Reducer	3			Γ	Γ		Г
10-4044	Silp Thread Adapter	_	Τ		Γ	Γ		Г

SPECIAL I	FEATURES		Γ	7	Τ	7	7	7	7	7	7	77
(And Misc.	Tooling)	1			$\frac{1}{2}$	L/	6/	6/		./	۱,	
PART #	TYPE	12	}/ <u>:</u>	//	9/3	2/3	<b>*/</b> :	3/3	<b>}</b> :	3/3	3/3	3/
G2107	Training Tapes (V.C.R.)	•				•	٠	•				ĺ
10-2080	Angle Dial	٠				•	•	•				]
10-2098	Tool Tray	•		L		L						
10-2400	Auto Depth Control	•	•	•	•	•	•	•	•			1
10-2100	Bending Date System	•				•	•	•				]
10-2102	Rigid #30 Pipe Cutter	•						Γ			Г	]
10-3026/30	Flattening Plates							•				1
10-2051	Die Tool	٠	•	•	•	•	٠	•	•	•	•	1
10-2101	1 Lb. Die Lubricant	•	•	٠	•	•	•	•	•	•	٠	
10-2103	Assorted (29) "O" Rings	•	•	•	•	•	•	•	•	•	•	]
10-2098	Die Tray	•										
Undef.	Hyd. Fluid 7-Gallons	•	•	•	•	•	٠	•	•	•	•	
10-2046	20' Power Cord	٠	٠	٠	•	•	•	•	•	•		

### **QUICK REFERENCE GUIDE**

#### BENDING DIES

Worth's exclusive permanent mold cast process provides a better bend, 3 yr. limited war-ranty and are re-usable. You are assured a 30% trade-in allowance on new dies. Steel dies available w/1 yr. limited warranty.



#### **RADIUS DIES**

(Pusher/Bumper)

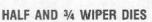
PART NO.	RADIUS	TUBE SIZE
10-5015	3"	11/2"
10-5016	4"	11/2"
10-5023	3"	13/4"
10-5024	4"	13/4"
10-5025	5''	13/4"
10-5028	4''	1 7/8"
10-5029	5''	1 7/8"
10-5032	3''	2"
10-5033	4"	2"
10-5034	5"	2"
10-5037	4"	21/4"
10-5038	5''	21/4"
10-5042	5''	21/2"
10-5047	6''	3''

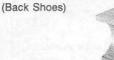


### WIPER DIES

(Back Shoes)

PART NO.	TUBE SIZE
10-5017	11/2"
10-5026	13/4"
10-5030	1 7/8"
10-5035	2''
10-5039	21/4''
10-5043	21/2"
10-5048	3"





10-5040

10-5041

10-5044

PART NO.	WIPER LENGTH	TUBE SIZE
10-5018	1/2''	11/2"
10-5027	1/2	13/4"
10-5031	1/2	1 7/8"
10-5036	1/2	2"

21/4"

21/4"

21/2"

1/2

3/4

1/2

#### SWAGER TOOLING

(Solid/End Finishing)

TUBE SIZE

11/2

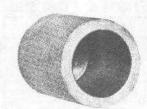
13/4

1 7/8"

3"



REDUCTION	RAMS
(Reducers)	



PART NO.	TUBE SIZE
10-4016	11/2''
10-4017	13/4"
10-4018	1 7/8"
10-4019	2"
10-4020	21/4"
10-4021	21/2"
10-4022	3''

(Expander/Ball Joint) (Ball Flares)

QUICK CONNECT SLIP RAM/MALEBALL

PART NO.

(Expander)

10-4002

10-4004

10-4006

10-4013

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PART NO.	TUBE SIZE		
10-4035	2"/1¾" B		
10-4036	21/4"/2" B		
10-4037	21/2"/21/4" B		

#### QUICK CONNECT MALE BALL

(Ball Flare)



A CHARLES OF THE CONTRACTOR OF			
PART NO.	TUBE SIZE		
10-4038	21/2"		

#### QUICK CONNECT **FEMALE BALL**

(Ball Flare)



PART NO.	TUBE SIZE		
10-4039	13/4" Thru 21/2"		

#### QUICK CONNECT DOMING DIE



PART NO.	TUBE SIZE		
TART NO.	TODE SIZE		
10-4040	134" Thru 21/2"		

#### QUICK CONNECT **HEAD PIPE FLARE\***



PART NO.	TUBE SIZE		
10-4014	11/2" Thru 3"		

\*NOTE - This Head Pipe Flare must slip on the end of the 1½" Slip Ram Die (10-4002)



### HEADER COLLECTOR



PART NO.	TUBE SIZE
10-4041	21/4"/21/2"

#### MANIFOLD FLANGE

(One Piece Chevy Flange)



PART NO.	TUBE SIZE
10-4042	2''
10-4043	21/4"

#### **EXPANDER TOOLING**

(Segment/End Finishing) No more broken segments with Worth's 4340 hot rolled, commercial grade steel. All segments carry a 1 yr. limited warranty!



10-3022

M-Ball







FLARE PAR

FEMALE BALL MALE BALL

PART NO.	NAME	TUBE SIZE	PART NO.	NAME	TUBE SIZE
10-3005	SLIP	11/2"	10-3024	M-Ball	21/2"
10-3006	SLIP	134"	10-3019	F-Ball	134"
10-3007	SLIP	1 7/8"	10-3021	F-Ball	2"
10-3007	SLIP	2"	10-3023	F-Ball	2¼"
10-3008	SLIP	2¼"	10-3025	F-Ball	21/2"
10-3008	SLIP	21/2"	10-3012	FLARE	11/2''
10-3009	SLIP	3"	10-3014	FLARE	134''
10-3018	M-Ball	134''	10-3015	FLARE	2"
10-3020	M-Ball	2"	10-3016	FLARE	21/4"

10-3017

FLARE

21/2"