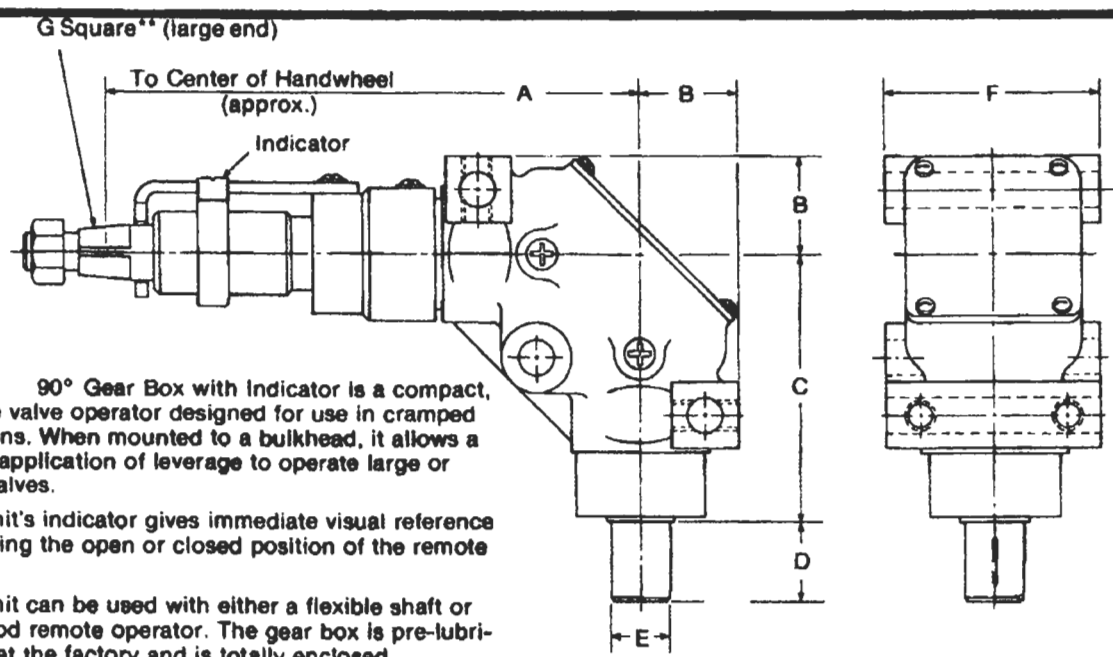


90° Gear Box with Indicator



90° Gear Box with Indicator is a compact, unique valve operator designed for use in cramped locations. When mounted to a bulkhead, it allows a better application of leverage to operate large or tight valves.

The unit's indicator gives immediate visual reference regarding the open or closed position of the remote valve.

The unit can be used with either a flexible shaft or rigid rod remote operator. The gear box is pre-lubricated at the factory and is totally enclosed.

Note: Mounting holes and their dimensions same as 90° Gear Box

RIGID ROD

Size	Rod Dia.	Number	Indicator†		A	B	C	D	E	F	G** (Sq.)
			Thds./In.	Usable Turns							
40	1/8	18607-504	9	11	7 1/8	1 1/16	3 3/8	1 1/16	497 488	2 1/2	.375
160	1/4	18638-504	8	14	8 1/2	1 1/8	4 1/4	1 1/2	747 748	3	750
	1	18638-505	8	17	9 1/16	1 1/8	4 1/8	1 1/2	997 998	3	1.188
	1	18638-506	16	34	9 1/16	1 1/8	4 1/8	1 1/2	997 998	3	1.188
250	1 1/4	19503-503	8	17	10 1/16	1 1/16	5 1/16	1 1/8	1,248 1,247	3 1/2	1.375
	1 1/4	19503-504	20	42	10 1/16	1 1/16	5 1/16	1 1/8	1,248 1,247	3 1/2	1.375

Bill of Materials

Description	Material
Gear Box	Aluminum
Housing	Steel
Spindle	Steel
Gear	Steel
Rollpin	Steel
Seal	Syn. Compound
Bearing	Steel
Cover	Leaded Brass
Pipe Plug	Brass
Gasket	Vellumoid
Rd. Hd. Screw	Brass
Lockwasher	Bronze
Retaining Ring	Steel
Thrust Washers	Steel
Bearing	Steel
Shim	Brass
Terminal	
Indicator Plate	Brass
Indicator Arm	Mn. Bronze
Spindle Adapter	Al. Bronze
Nut	Brass
Washer Hd. Screw	Brass
Woodruff Key	Steel
Roll Pin	Steel

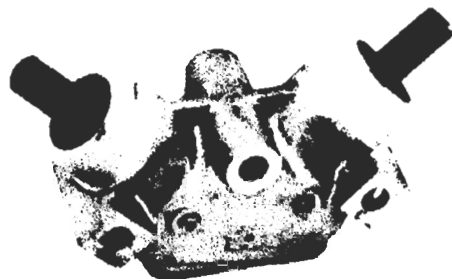
†Specify part number whose usable turns are equal to or greater than number of turns required.

90° Gear Box

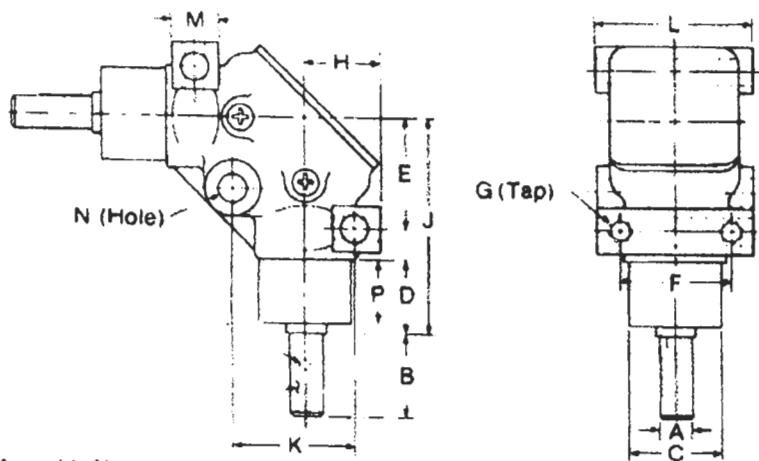
The 90° gear box can transmit torque through sharp bends in the path of the flexible shaft or rigid rod remote operator for manual or low-speed power drive applications. The short spindle extensions allow the closest possible fit in tight corners. A clockwise input delivers a clockwise output.

Three sizes are available ranging in torque from 500 to 3600 inch pounds, and are approximately 95% efficient. The gear box is pre-lubricated at the factory and is totally enclosed.

Gear boxes can be furnished for noncorrosive or nonmagnetic applications. The standard housing is available in manganese bronze or aluminum, with bolt hole bosses for face mounting and tapped holes for corner mounting.



90° Gear Box



Assembly Note: Mating parts to be pinned or welded by customer.

**S" holes to be drilled and pinned to mating part by customer.

Bill of Materials

Description	Material
Housing	Mn. Bronze or Aluminum
Spindle	Steel
Gear	Steel
Roll Pin	Steel
Seal	Syn. Compound
Bearing Surface	Mn. Bronze or Alu
Cover	Leaded Brass
Pipe Plug	Brass
Gasket	Vellumoid
Rd. Hd. Screw	Brass
Lockwasher	Bronze
Retaining Ring	Steel
Thrust Washers	Steel
Shim	Brass
Washer Hd. Screw	Brass
(Qty-6)††	
Taper Pin (Qty-2)††	Steel
Woodruff Key (Qty-2)††	Steel

Standard Model*						
Rod Dia.	Part Number		A†	B†	As Cast C	Premium Model Number
	Bronze	Aluminum				
1/2	23422-501	23423-501	.498	1 1/16	1%	13293 BRZ 14591 AL
			.497			
5/8	23422-502	23423-502	.823	1 1/2	2%	13294 BRZ 14561 AL
			.622			
3/4	23407-501	23406-501	.748	1 1/2	2%	12649 BRZ 14598 AL
			.747			
1	23407-502	23406-502	.997	1 1/8	2%	12649 BRZ 14598 AL
			.998			
1 1/4	23412-501	23411-501	1.248	1 1/8	2%	12649 BRZ 14598 AL
			1.247			

COMMON DIMENSIONS

Size	D	E	F	G (Tap Typical)	H	J	K	L	M	N (Hole)	P
40	1 1/32	1 3/4	1 3/4	3/8 - 16	1 1/16	3%	1 13/16	2 1/2	7/8	7/16	1 1/32
160	1 13/32	2 5/8	2	1/2 - 13	1 5/8	4%	2 3/4	3	1 1/8	9/16	1 3/32
250	1 21/32	2 11/16	2 1/2	5/8 - 11	1 13/16	5 1/16	3 1/16	3 3/4	1 3/8	1 1/16	1 19/32