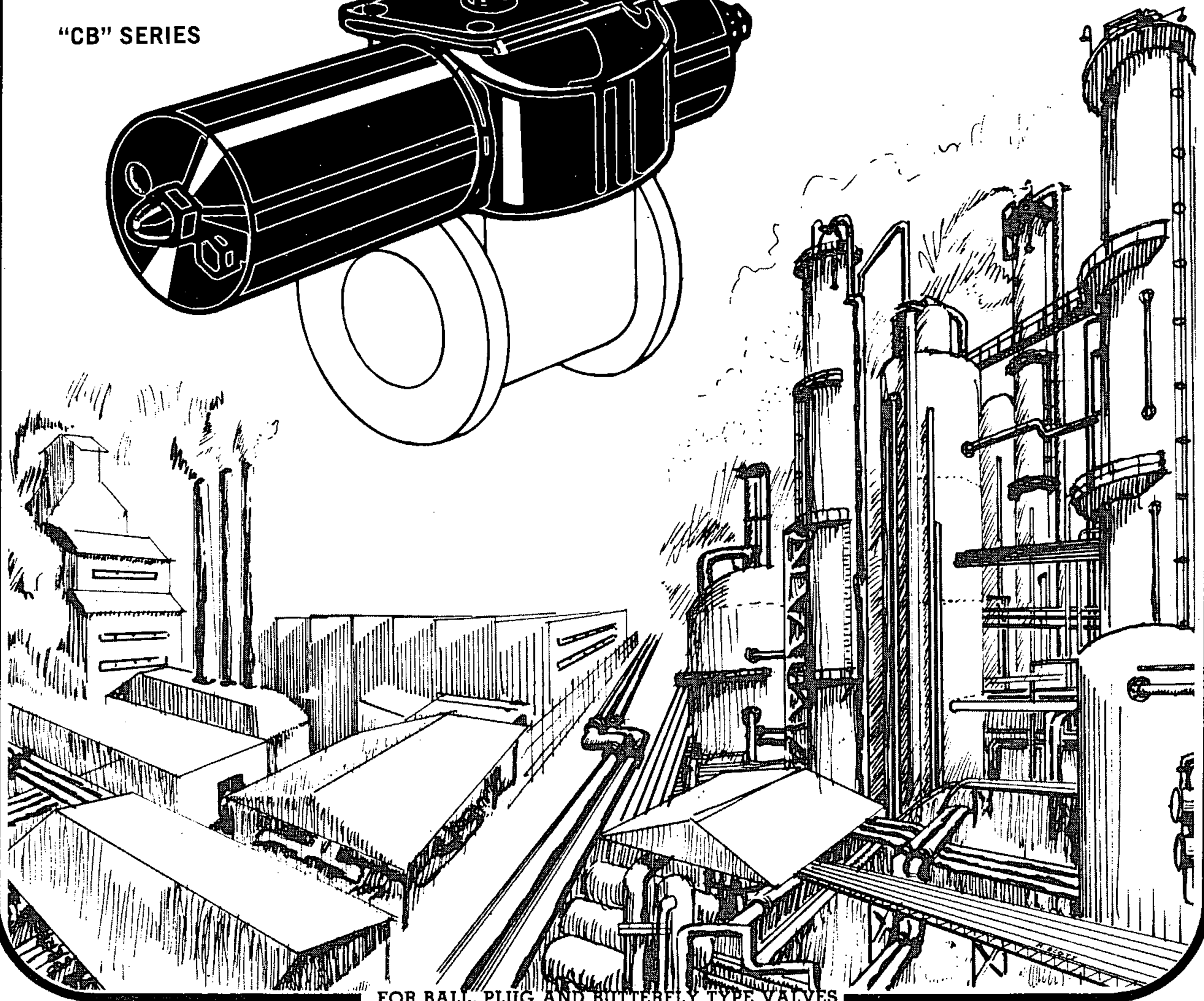
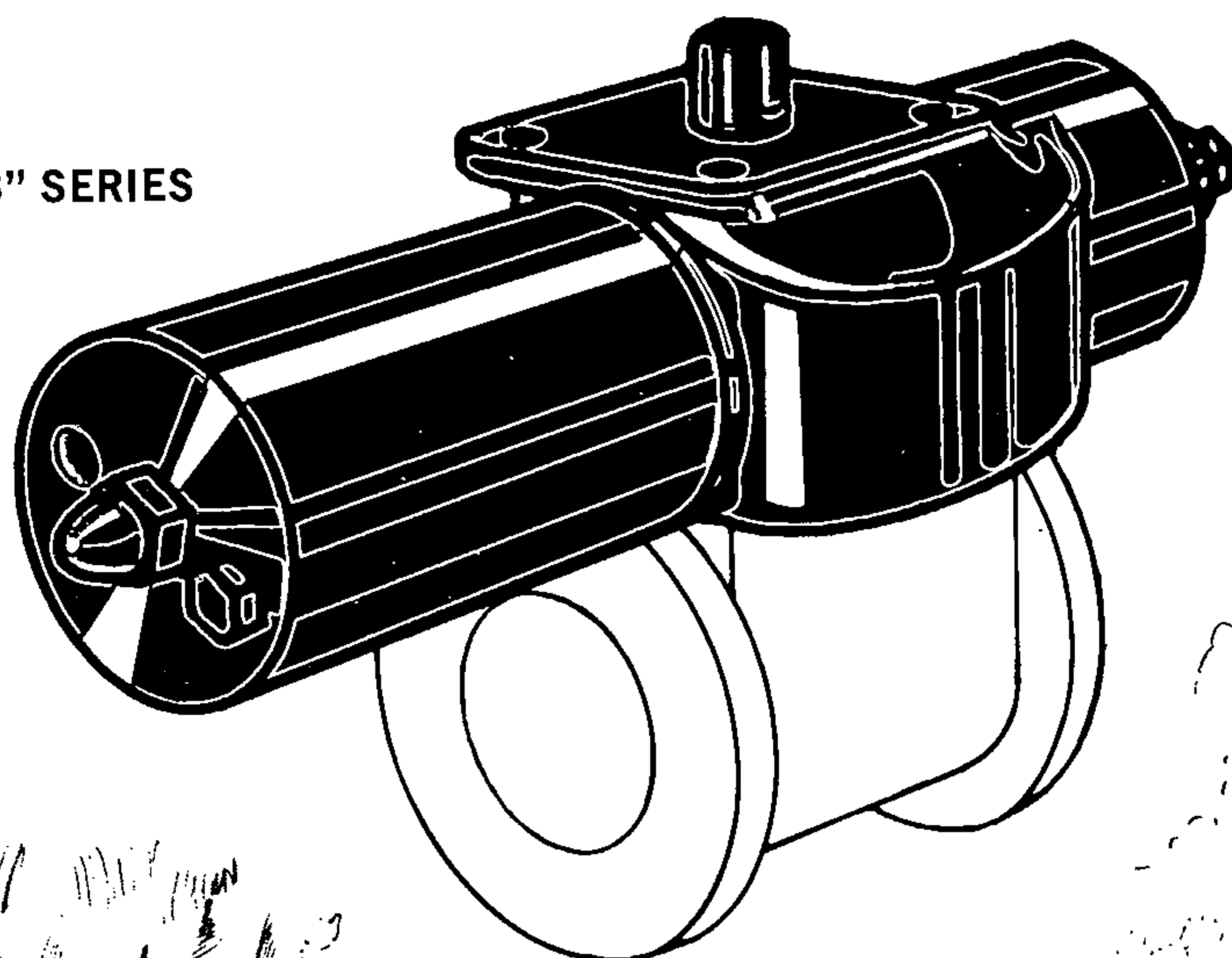




# ROBOTARM® VALVE ACTUATORS

"CB" SERIES



FOR BALL, PLUG AND BUTTERFLY TYPE VALVES

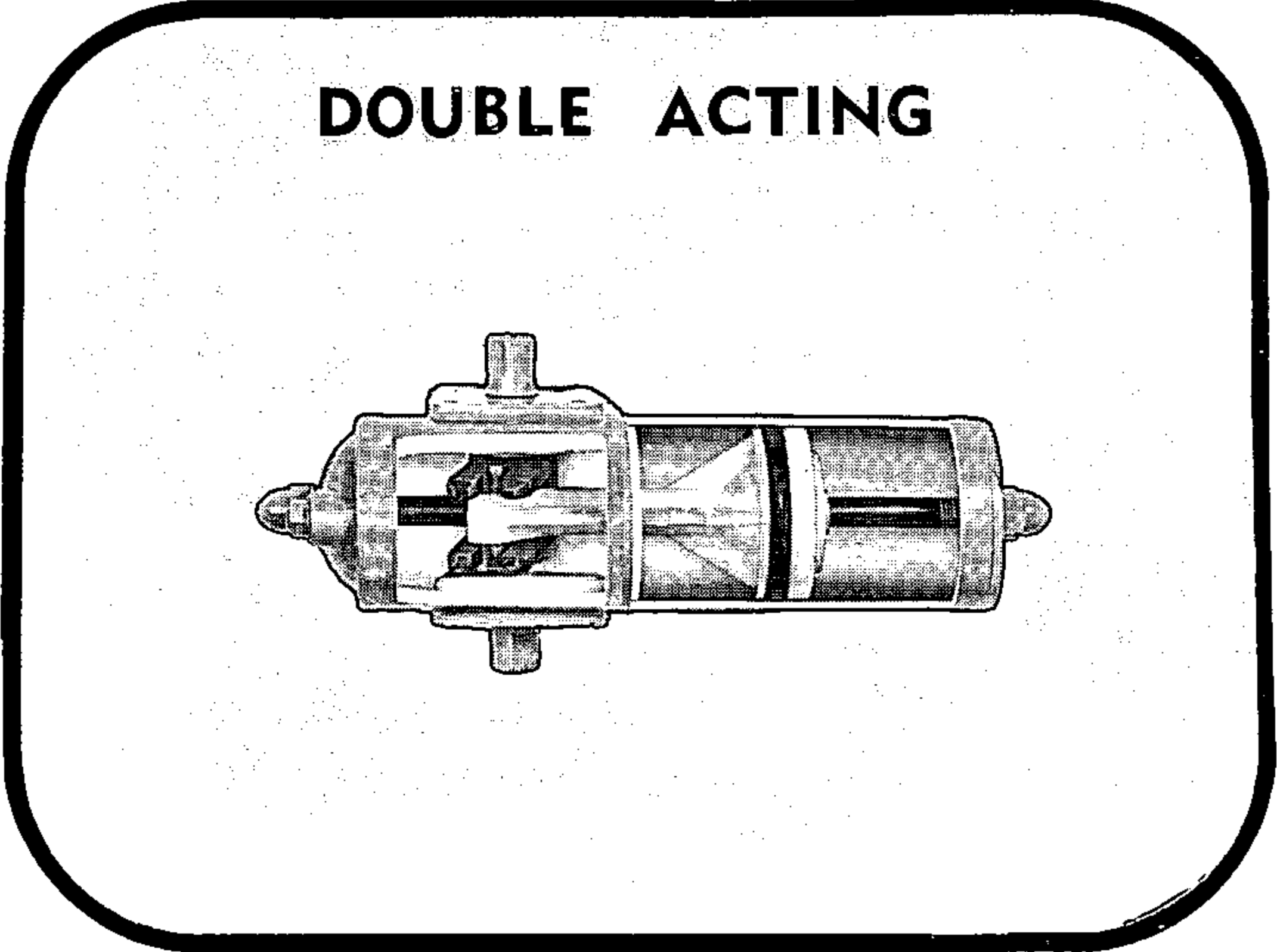
**C B SERIES**



The ROBOTARM Model "CB" Series Actuator is a gas or air-driven cylinder-type operator that gives positive remote control for any type of 90° rotary operation. The Model "CB" ROBOTARM is the most economical and most compact rotary actuator available. Standard units are manufactured in several sizes from 300 to 17500 inch pounds of opening and closing torque with 100 p.s.i. air pressure in both double acting and spring-return models.

ROBOTARM units are totally enclosed and sealed. Adjustable stops in the actuator maintain precise position repeatability.

The ROBOTARM Model "CB" Series has been tried and proven in extensive field use. Due to its patented center-bar design that eliminates the friction of piston-to-cylinder side thrust, the Model "CB" ROBOTARM is the ultimate in efficient pneumatic automation for 90° turn valves.



**AIR DISPLACEMENT PER STROKE**

MODEL NUMBER	Cu. In.	Cu. Ft.	MODEL NUMBER	Cu. In.	Cu. Ft.
CB-315	30	0.017	CB-525	130	0.075
CB-315-SR	30	0.017	CB-525-SR	130	0.075
CB-415-SR	50	0.029	CBL-725	220	0.127
CB-420	60	0.035	CB-725-SR	220	0.127
CB-420-SR	60	0.035	CB-735	505	0.293
CBL-520	110	0.064	CB-735-SR	505	0.293
CB-520-SR	110	0.064			

These values are the actual physical volumes displaced by one stroke for each actuator. The following formula may be used to determine the FREE AIR CONSUMPTION for each actuator:

$$Q = V \times \frac{P + 14.7}{14.7} \times \frac{60}{T}$$

where

Q = Free Air Consumption per minute

V = Actuator displacement

P = Gage pressure

T = Operating time in seconds

**Gauge pressure**

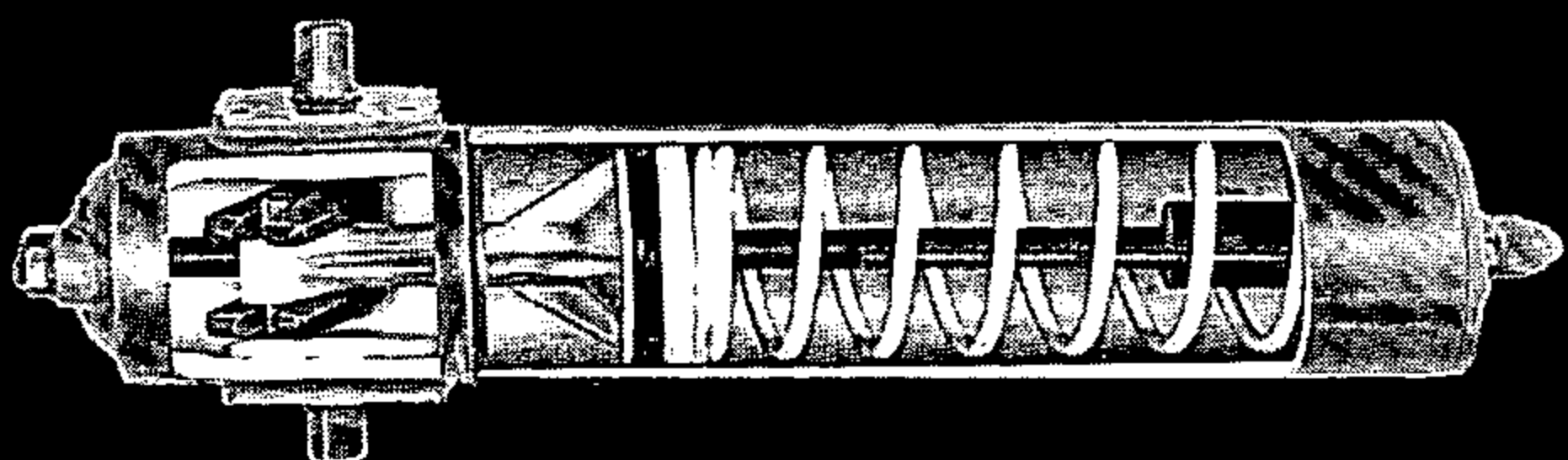
ACTUATOR MODEL	WEIGHT IN/LBS	TORQUE IN/LBS.	OPERATING PRESSURE - LBS./SQ. INCH							
			40	50	60	70	80	90	100	120
CB-315	12	BREAK	540	675	810	950	1080	1210	1350	1620
		RUNNING	360	450	540	630	720	810	900	1080
CBL-415		DISCONTINUED								
CB-420	27	BREAK	1320	1600	1880	2180	2460	2740	3000	3590
		RUNNING	860	1050	1240	1430	1620	1810	2000	2380
CBL-520	33	BREAK	1930	2390	2850	3320	3860			
		RUNNING	1290	1600	1900	2200	2580			
CB-525	48	BREAK	2490	3070	3650	4230	4800	5400	6000	7150
		RUNNING	1660	2050	2440	2820	3200	3600	4000	4770
CBL-725	59	BREAK	4620	5760	6900	8000	9240			
		RUNNING	3060	3840	4600	5400	6120			
CB-735	98	BREAK	6150	7000	8750	10500	12250	14000	15750	17500
		RUNNING	3850	4400	5500	6000	7700	8800	9900	11000

"CB" - CENTER BAR SERIES - 120 P.S.I. MAX.  
 "CBL" - CENTER BAR LOW PRESSURE SERIES - 80 P.S.I. MAX.  
 FIGURES GIVEN IN BODY OF TABLE ARE NET TESTED TORQUE OUTPUT OF THE ACTUATORS IN INCH POUNDS.

ACTUATOR MODEL	WEIGHT IN/LBS	TORQUE IN/LBS.	OPERATING PRESSURE - LBS./SQ. INCH						
			40	50	60	70	80	90	100
CB-315-SR	18	BREAK	400	400	600	600	800	800	1000
		ENDING	200	200	300	300	400	400	500
CB-415-SR	25	BREAK	700	700	1000	1000	1400	1400	1800
		ENDING	350	350	500	500	700	700	900
CB-420-SR	44	BREAK	800	800	1200	1200	1600	1600	2000
		ENDING	400	400	600	600	800	800	1000
CB-520-SR	52	BREAK	1200	1200	2000	2000	2600	2600	3400
		ENDING	600	600	1000	1000	1300	1300	1700
CB-525-SR	70	BREAK	1800	1800	2600	2600	3400	3400	4200
		ENDING	900	900	1300	1300	1700	1700	2100
CB-725-SR	101	BREAK	3400	3400	5000	5000	6800	6800	7600
		ENDING	1700	1700	2500	2500	3400	3400	3800
CB-735-SR	180	BREAK	4700	5850	7000	8200	9350	10500	11700
		ENDING	2350	3000	3500	4100	4700	5250	5850

"SR" - SPRING RETURN  
 FIGURES GIVEN IN BODY OF TABLE ARE NET TESTED TORQUE OUTPUT OF THE ACTUATORS IN INCH POUNDS.

# SPRING RETURN

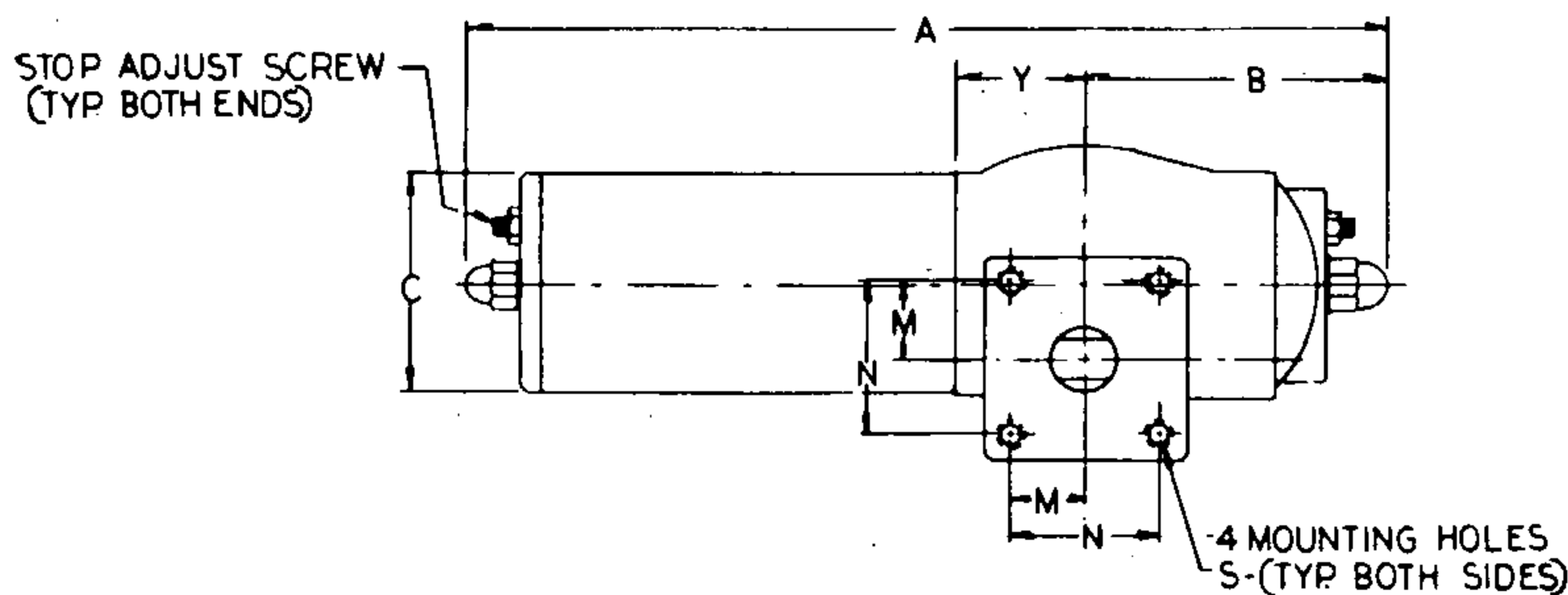


**Bettis spring-return actuators are the only actuators which provide SERVICE-SAFE spring-loading. Unique internal spring-loading features make it possible for Robotarm actuators to be safely dismantled and serviced in the field without special equipment.**

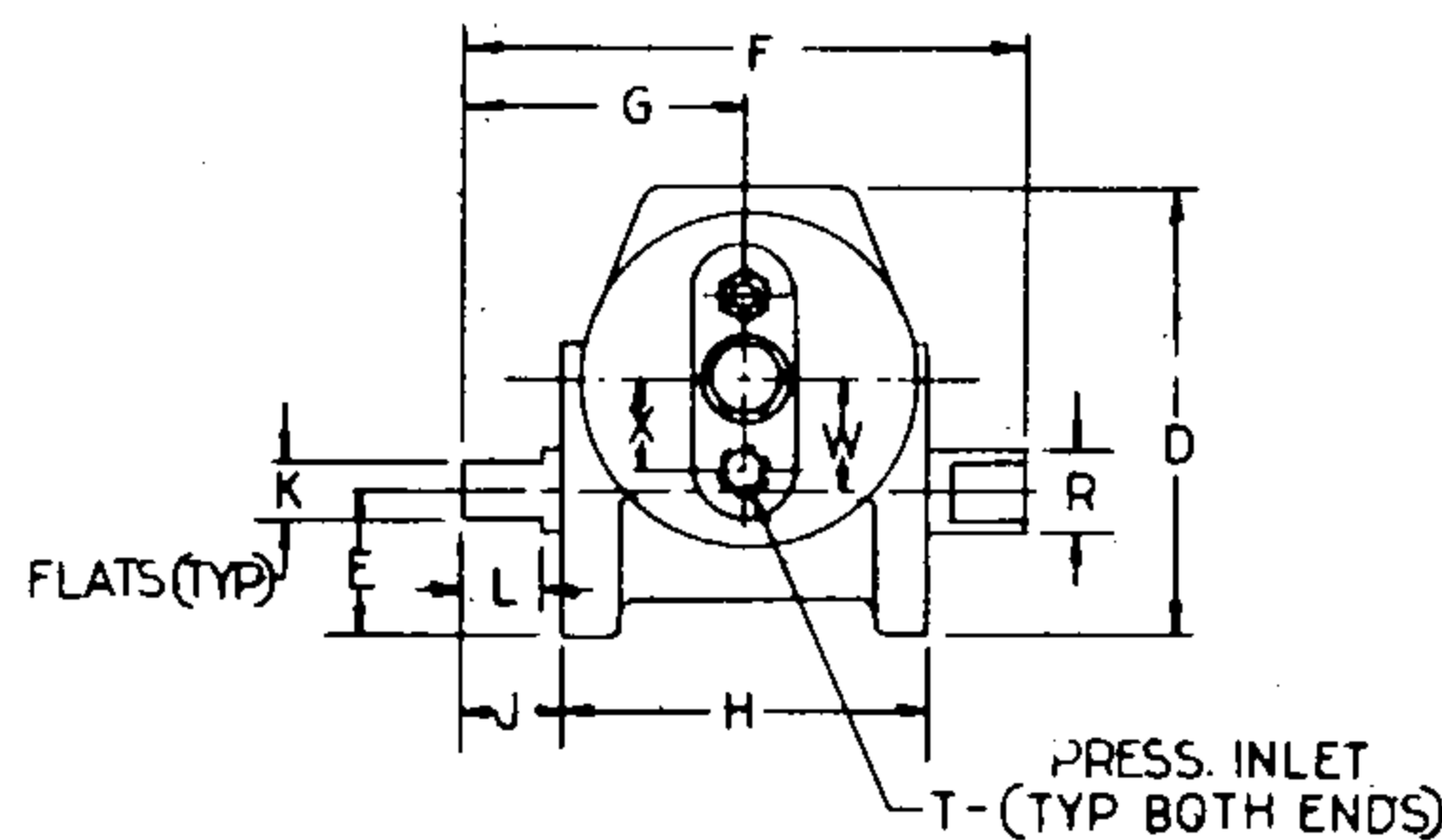
Fail-safe spring return units are available in all models to close—or open—a valve on loss of operating air pressure. Spring units may be converted from “spring to open” to “spring to close” or vice-versa by merely turning the actuator over and mounting it on the opposite mounting pad. Square mounting pads allow the ROBOT-ARM to be mounted in line with or at right angles to run of the valve.

Though classed as medium-duty actuators, there are no shortcuts in material and workmanship. They are precision-built to give you long, trouble-free service. (When used with the proper air-line lubricating system and properly sized, the “CB” actuator will have a service life equal or superior to the valve on which it is installed.) Bettis “CB” actuators are now operating in installations where they are cycled four times per minute, and are still going strong after a quarter-million trouble-free cycles.

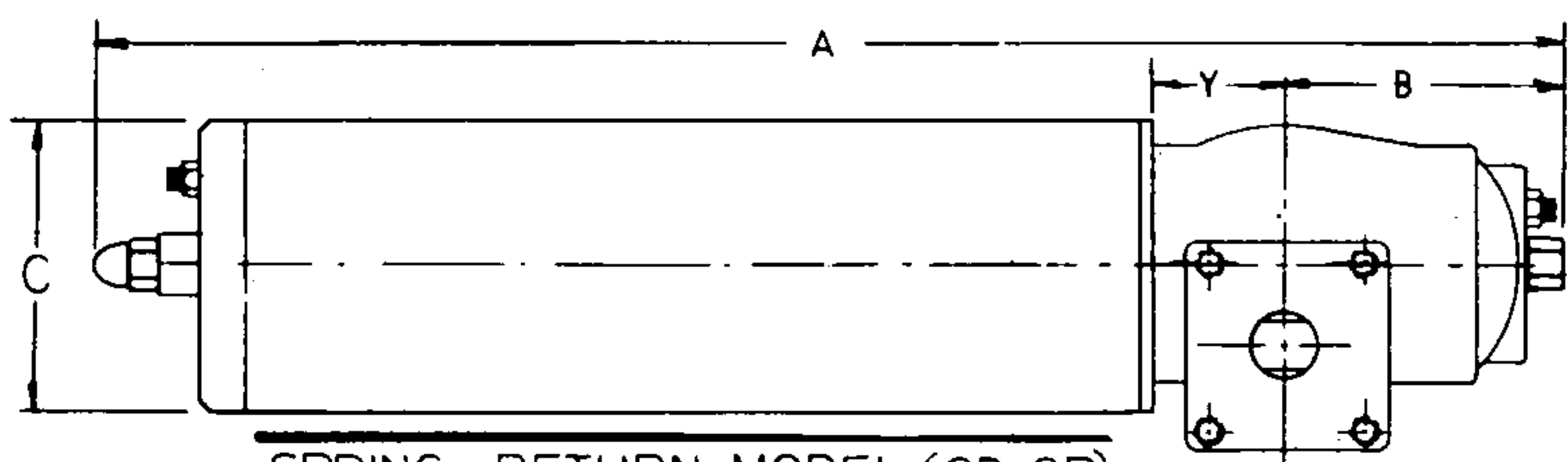
PATENTED IN U.S. AND FOREIGN COUNTRIES  
U.S. PATENT #3,104,592



STANDARD DOUBLE ACTING MODEL (CB)



LOW PRESS. DOUBLE ACTING MODEL (CBL)

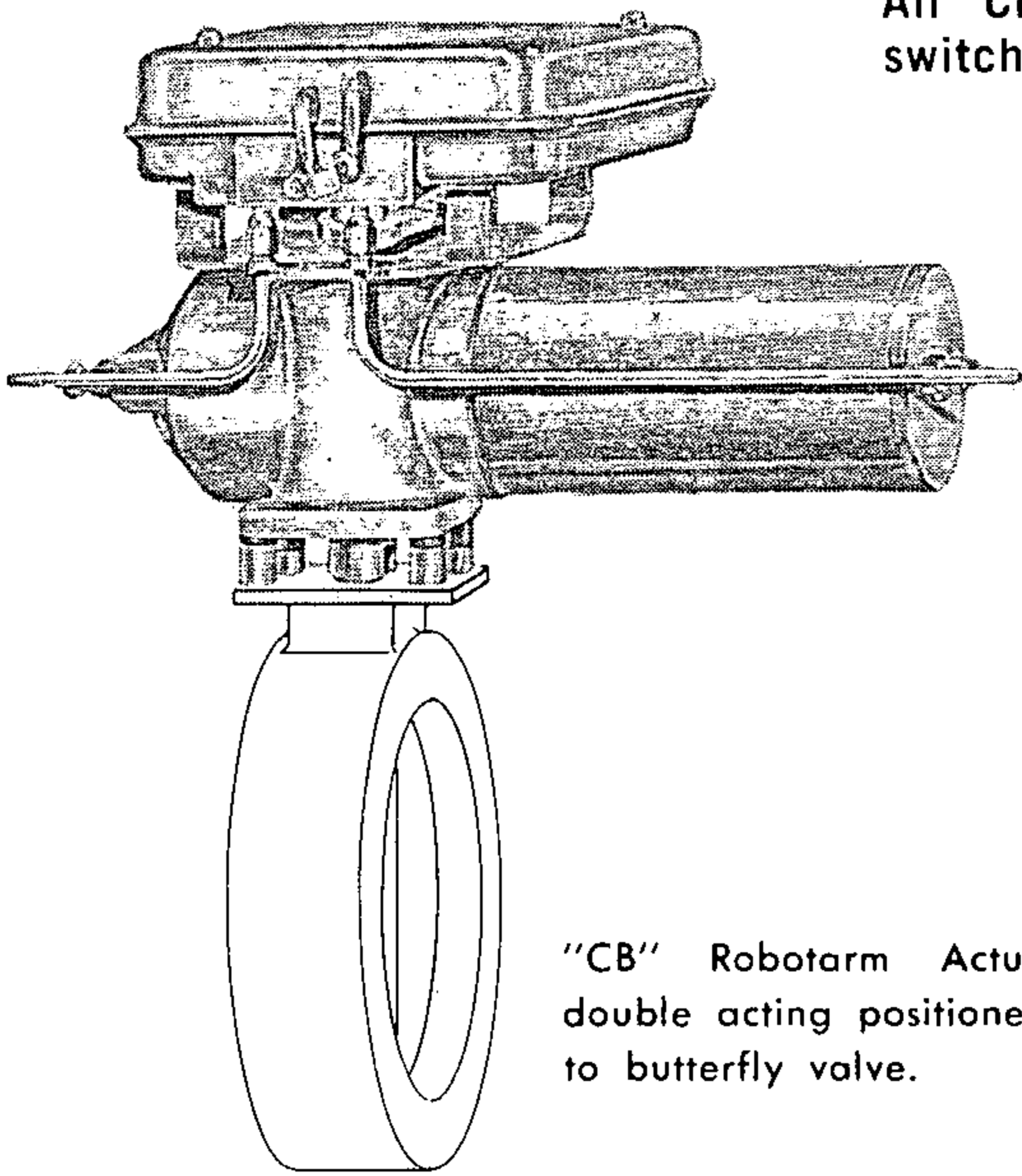


SPRING RETURN MODEL (CB-SR)

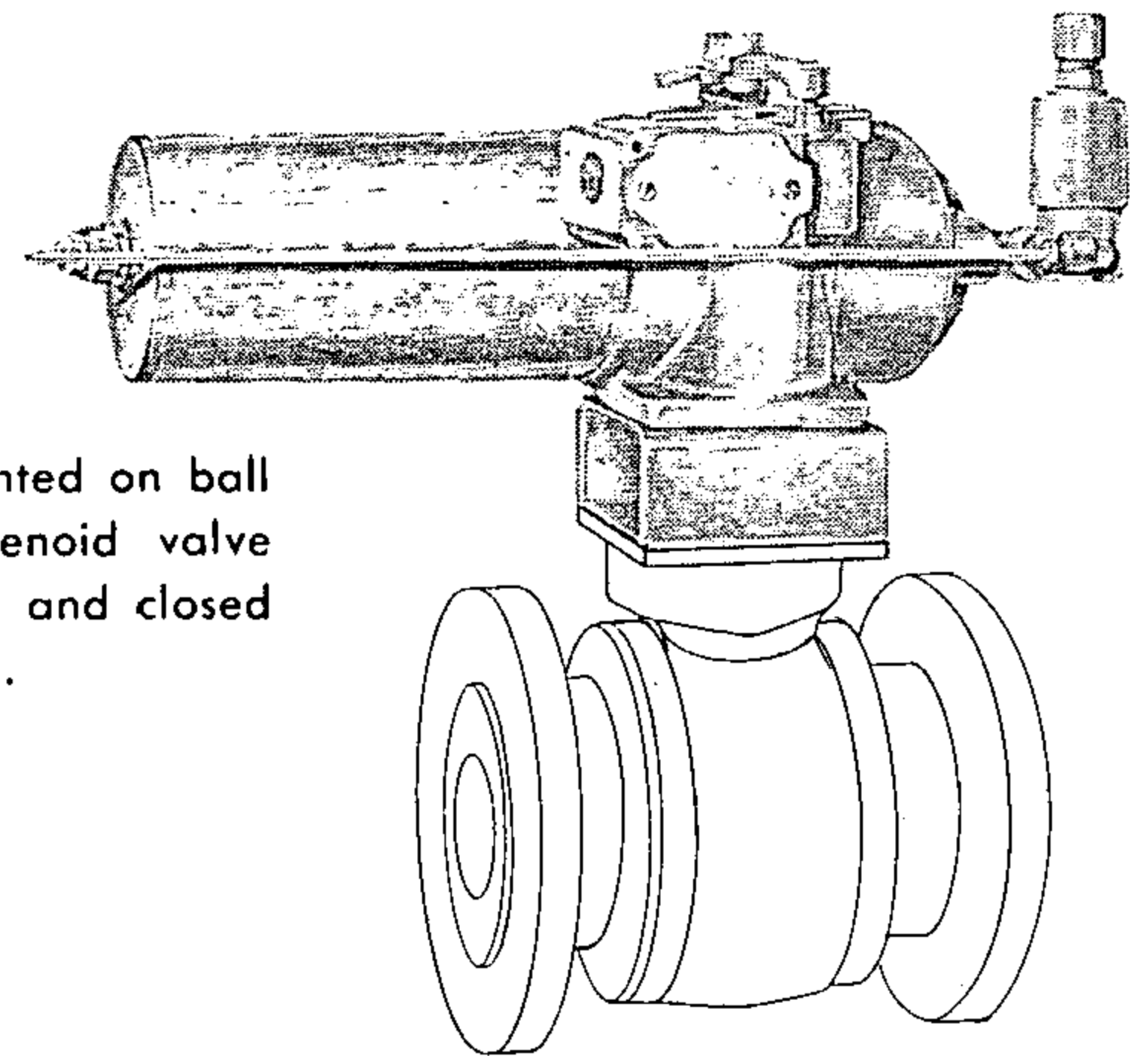
MODEL NO.	A	B	C	D	E	F	G	H	J	K	L	M	N	R (dia)	S	T	W	X	Y
CB-315	13 <sup>3</sup> / <sub>4</sub>		3 <sup>1</sup> / <sub>4</sub>																
CB-315-SR	20 <sup>7</sup> / <sub>16</sub>	4 <sup>7</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>4</sub>	4 <sup>11</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>16</sub>	2 <sup>29</sup> / <sub>32</sub>	3 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>32</sub>	5 <sup>5</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub>	7 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>16</sub> -NC18	1 <sup>1</sup> / <sub>4</sub> -NPT	1 <sup>3</sup> / <sub>32</sub>	1 <sup>1</sup> / <sub>16</sub>	1 <sup>7</sup> / <sub>8</sub>
CB-415-SR	20 <sup>5</sup> / <sub>8</sub>		4 <sup>1</sup> / <sub>4</sub>																
CB-420	16 <sup>1</sup> / <sub>2</sub>		4 <sup>1</sup> / <sub>4</sub>																
CBL-520	16 <sup>5</sup> / <sub>8</sub>	5 <sup>5</sup> / <sub>8</sub>	5 <sup>3</sup> / <sub>8</sub>	5 <sup>7</sup> / <sub>8</sub>	2	6 <sup>1</sup> / <sub>16</sub>	3 <sup>11</sup> / <sub>32</sub>	4 <sup>5</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>32</sub>	7 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	3	1 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub> -NC16	3 <sup>1</sup> / <sub>8</sub> -NPT	1 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>8</sub>
CB-420-SR	24 <sup>3</sup> / <sub>16</sub>		4 <sup>1</sup> / <sub>4</sub>																
CB-520-SR	24 <sup>1</sup> / <sub>2</sub>		5 <sup>3</sup> / <sub>8</sub>																
CB-525	19 <sup>3</sup> / <sub>16</sub>		5 <sup>3</sup> / <sub>8</sub>																
CBL-725	19 <sup>3</sup> / <sub>16</sub>	6 <sup>3</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>2</sub>	7 <sup>3</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>16</sub>	8 <sup>3</sup> / <sub>4</sub>	4 <sup>3</sup> / <sub>8</sub>	5 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub> -NC13	3 <sup>1</sup> / <sub>8</sub> -NPT	1 <sup>1</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>16</sub>
CB-525-SR	27 <sup>1</sup> / <sub>2</sub>		5 <sup>3</sup> / <sub>8</sub>																
CB-725-SR	27 <sup>5</sup> / <sub>8</sub>		7 <sup>1</sup> / <sub>2</sub>																

MAX. WORKING PRESS. CB MODELS 120 P.S.I. CBL MODELS 80 P.S.I. CB-SR MODELS 100 P.S.I. MAX. ROTATION 102°

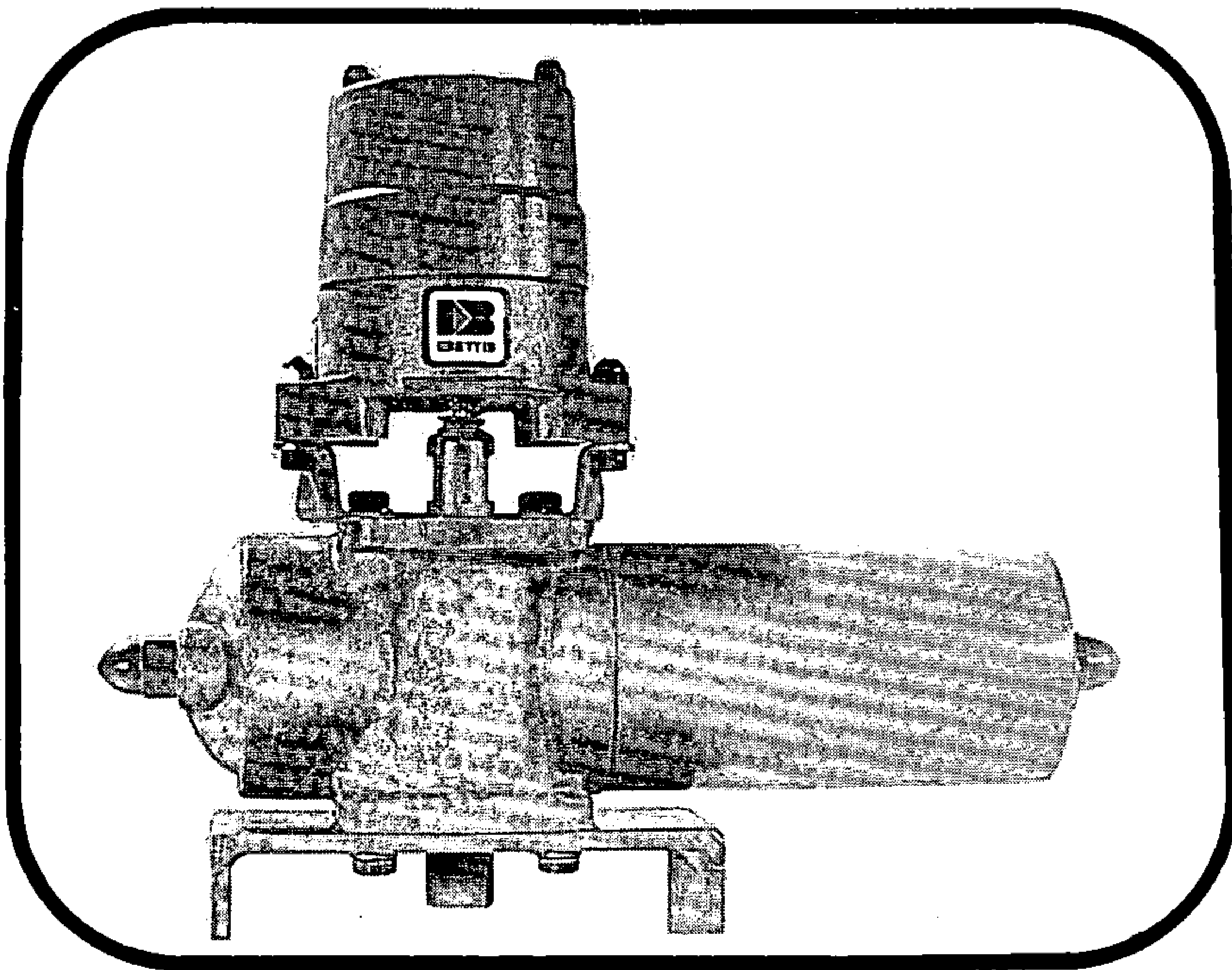
All "CB" Series units may be equipped with the necessary accessories, such as limit switches, solenoid valves and positioning valving for any degree of automation.



"CB" Robotarm Actuator with double acting positioner mounted to butterfly valve.



"CB" Robotarm Actuator mounted on ball valve with typical 4-way solenoid valve and limit switch to show open and closed position for remote operation.



CB 315 Robotarm Actuator with a Betti-Switch direct coupled to the top of the actuator. The switch is an explosion proof, raintight unit, normally supplied with two (2) circuits, the operating points of which are independently infinitely adjustable. This switch can be supplied with as many as eight (8) circuits which can be set to operate at any point through the cycle of the operator.

Actuator shaft easily accessible for manual operator.



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Litho in U.S.A.