

convert to fast,
efficient
manual operation
with

CRANE

CONVERTO-GEAR[®] OPERATORS

FOR GATE VALVES ■ GLOBE VALVES ■ ANGLE VALVES
■ STOP-CHECK VALVES (stem diameters from $\frac{3}{4}$ " to 4 inches)



OPERATORS FROM STOCK TO POWER UP NEW VALVES OR OLD

Here is a compact, maintenance-free gear operator for valves which are difficult or awkward for one man to control. A Converto-Gear operator enables a single worker to control valves as large as 48 inches. The mechanical advantage of the Converto-Gear operator's totally enclosed bevel gearing multiplies the force one man can exert.

Most common types of valves—both old and new, in all kinds of service—can now be equipped with Crane's standardized Converto-Gear operators, available from stock in three gear ratios and two styles.

Antifriction bearings give these operators up to 95 percent efficiency. A hammerblow starting feature cracks open tight valves that would otherwise be impractical for one man to operate. Permanent gear lubricant obviates maintenance problems. Four types of installation kits adapt most valves for conversion to Converto-Gear operation, and three gear ratios cover most operating torque requirements.

All the time-tested patterns of Crane gate valves can now be ordered with Converto-Gear operators factory installed, with no delay for modifications, and many other types and makes of valves can be equipped with Converto-Gear operators at the Crane factory or in the field, before or after installation of the valves.

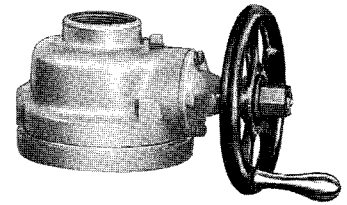
The Crane Converto-Gear operator can be mounted on a valve without removing the valve from the line or the line from service. In most cases, the entire conversion of a valve to Converto-Gear operation can be completed in about half an hour—by any competent mechanic—with no special equipment. The unique design of the Converto-Gear operator requires no critical machining operations for installation, whether the valve has a split yoke or bearing yoke, rising or nonrising stem—whether it is a gate valve, pulp-stock valve, globe valve, angle valve, or stop-check valve.

There is a Converto-Gear operator available from stock to power up almost any valve that is difficult to control!

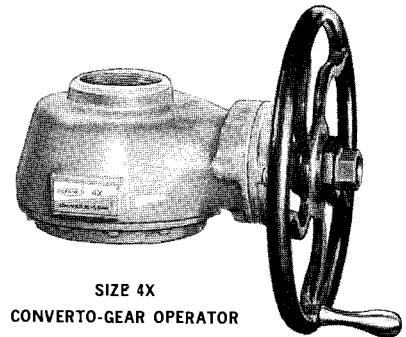
VALVE STEM SIZES ACCOMMODATED BY CONVERTO-GEAR OPERATORS*

Max. Stem Dia. (In.)		Converto-Gear Operator Size	Torque Mult Ratio (Approx.)	Handwheel Dia. (In.)	
Gate & Pulp-Stock Valves	Pipeline Valves			Style N	Style P
1½	1½	3X	3:1	6-20	9-16
3	2½	4X	4:1	16-30	16-20
4	2½	6X	6:1	20-30	20-24

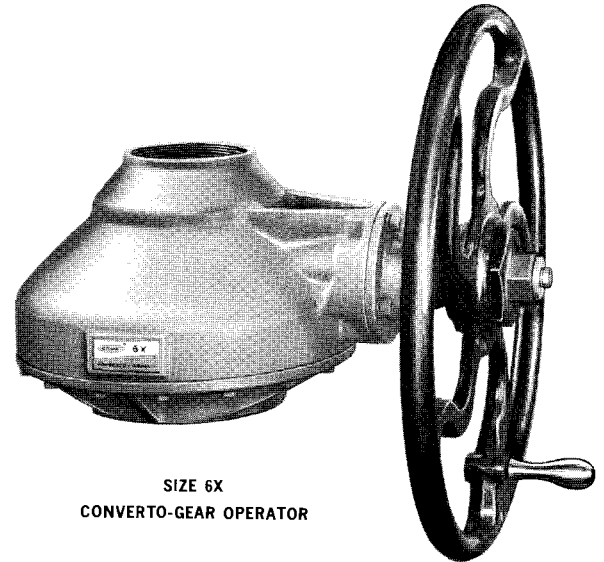
*For globe valves consult selection tables on page 11



SIZE 3X
CONVERTO-GEAR OPERATOR

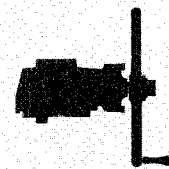


SIZE 4X
CONVERTO-GEAR OPERATOR



SIZE 6X
CONVERTO-GEAR OPERATOR

STYLE N



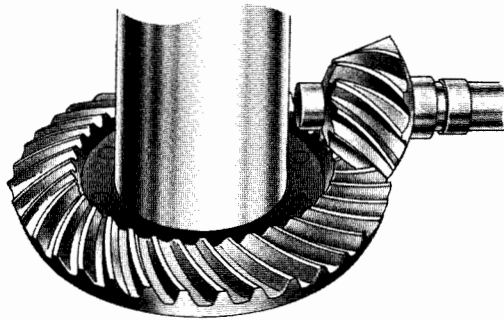
Style N, suitable for most applications, has handwheel parallel to valve stem.

STYLE P

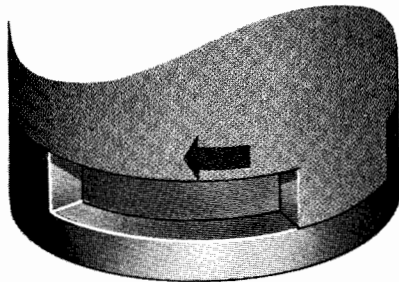


Style P is offered for use where handwheel must be perpendicular to valve stem.

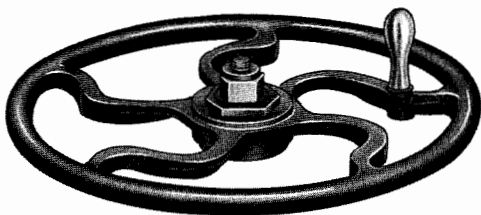
SIMPLE MODERN DESIGN ENSURES EASY, TROUBLE-FREE OPERATION



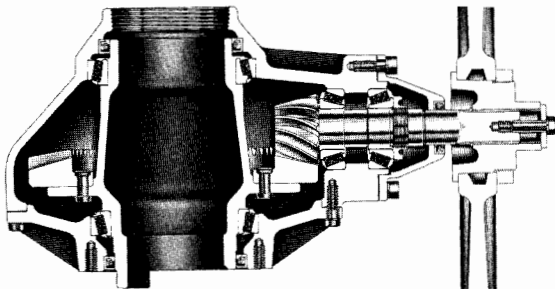
CARBURIZED-STEEL SPIRAL-CUT BEVEL GEARS provide smooth, continuous transmission of power through large tooth-contact areas. These gears have teeth far stronger than the spur gear teeth used in conventional gear operators, so Converto-Gear operators can withstand shocks and stresses far better than their compact size would indicate.



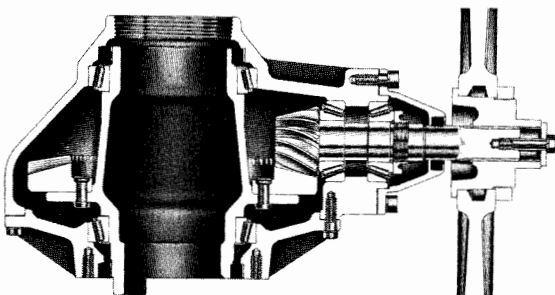
HAMMERBLOW STARTING of tight valves is a feature of the Converto-Gear operator's drive engagement principle. The momentum of all rotating parts can be exerted in a single impact to free up a difficult valve gate. The operator's driving lugs accelerate through 90 degrees before engaging the mating lugs of the valve stem adapter.



FAST OPERATION of valves is made possible by Converto-Gear design features. Handwheels have crank spindles that permit fast spinning after initial resistance is overcome. Handwheel pinion shafts terminate in standard-size hexagons suitable for driving by portable electric or pneumatic power wrenches.



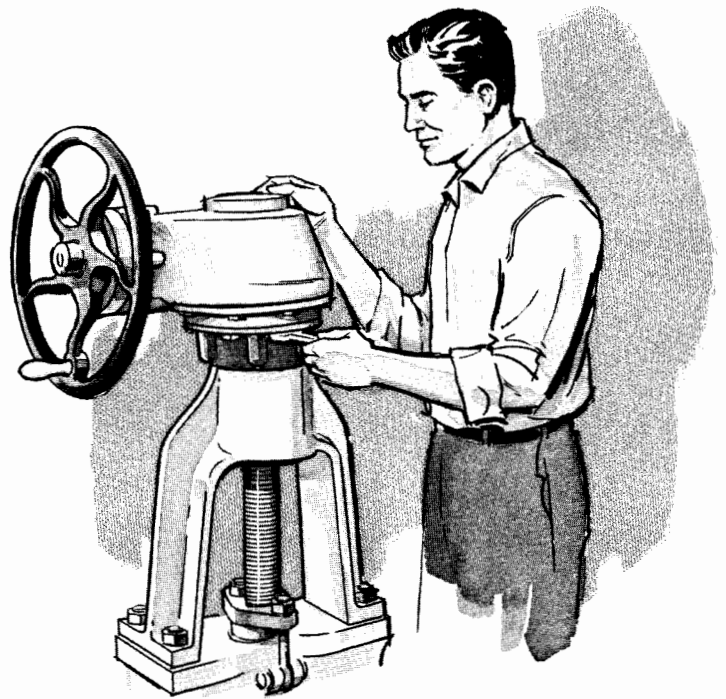
ANTIFRICTION BEARINGS in pairs support all rotating components of Converto-Gear operators, ensuring 90 to 95 per cent mechanical efficiency. Gear-tooth clearances established at the factory are essentially unchanged after thousands of operations.



STURDY, SEALED, CAST-IRON HOUSING keeps lubricant in, keeps foreign matter out, and maintains adjustment of gears in spite of rough treatment. Open gearing, exposed to weather and dirt, is wasteful of manpower and is easily damaged by accidental blows.

PERMANENT LUBRICATION protects Converto-Gear operator bearings and gears indefinitely. No maintenance is ever required in normal applications.

NONCRITICAL INSTALLATION procedure can be performed by any reasonably competent mechanic—with commonly available hand tools—in about half an hour! There is no need to remove a valve to a machine shop to equip it with a Converto-Gear operator. A valve need not even be removed from the line in which it is installed, and the line does not have to be taken from service. All necessary adapting parts and complete instructions are available in a field installation kit supplied from stock. New Crane valves can now be shipped factory-equipped with Converto-Gear operators with no delay for modifications. Converto-Gear operators can be installed on many types and makes of valves, both obsolete and current models.

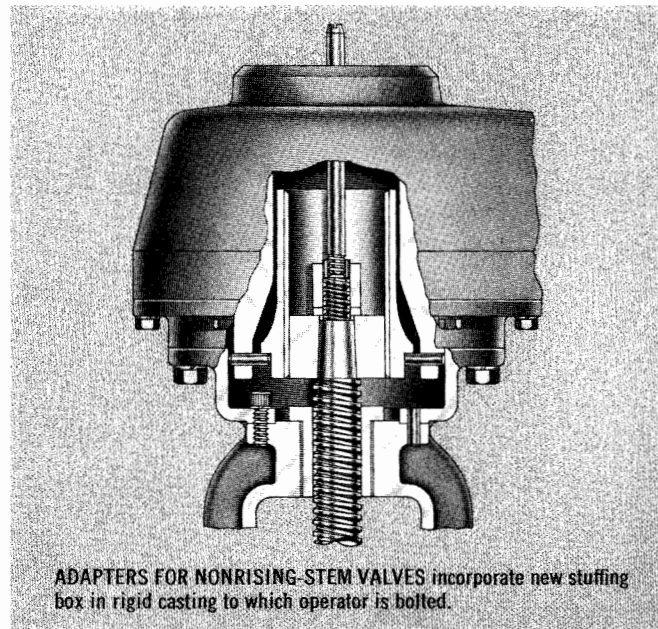
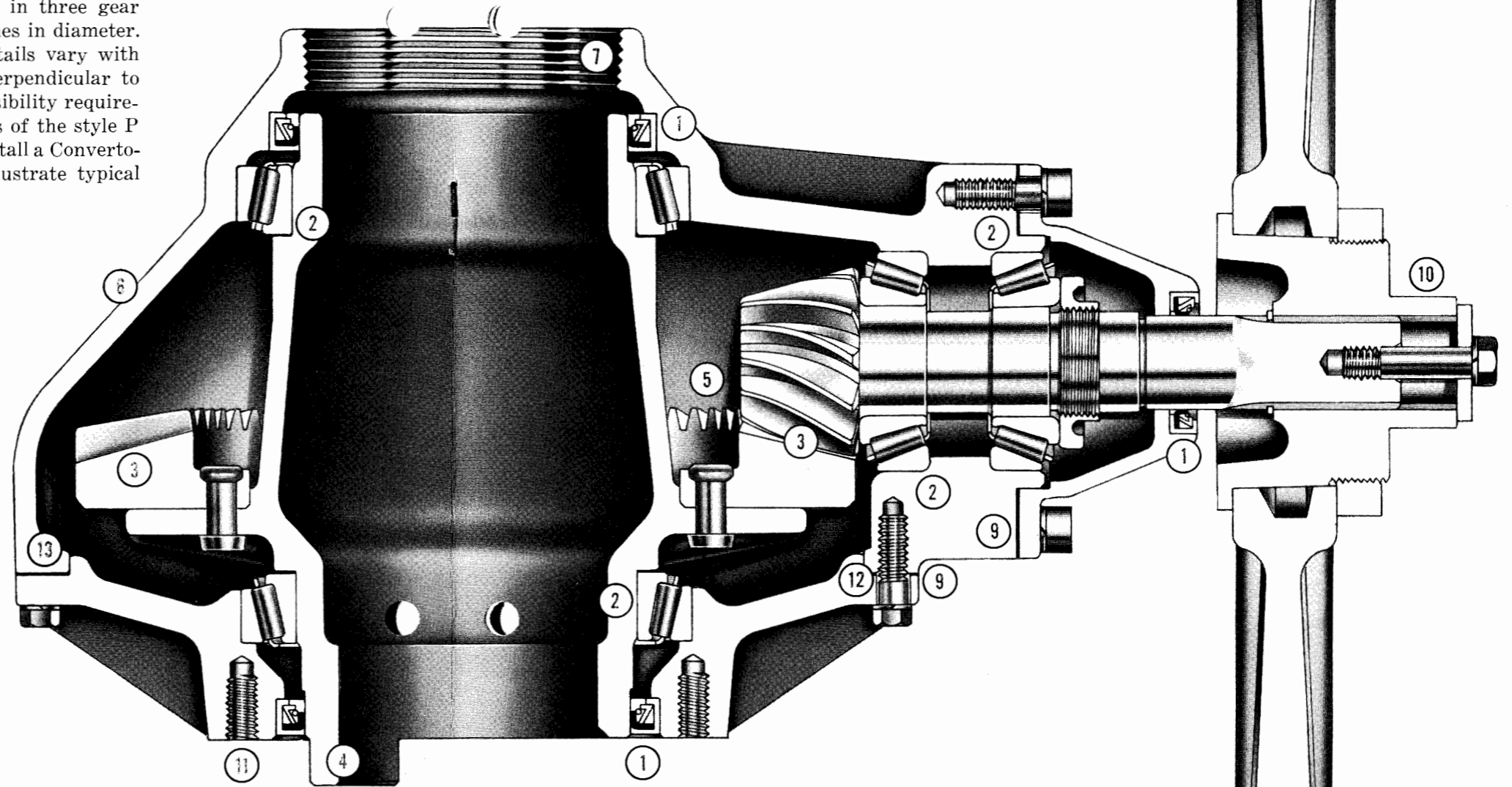


NUMEROUS OPTIONS are available with stock components—no delay for special arrangements.

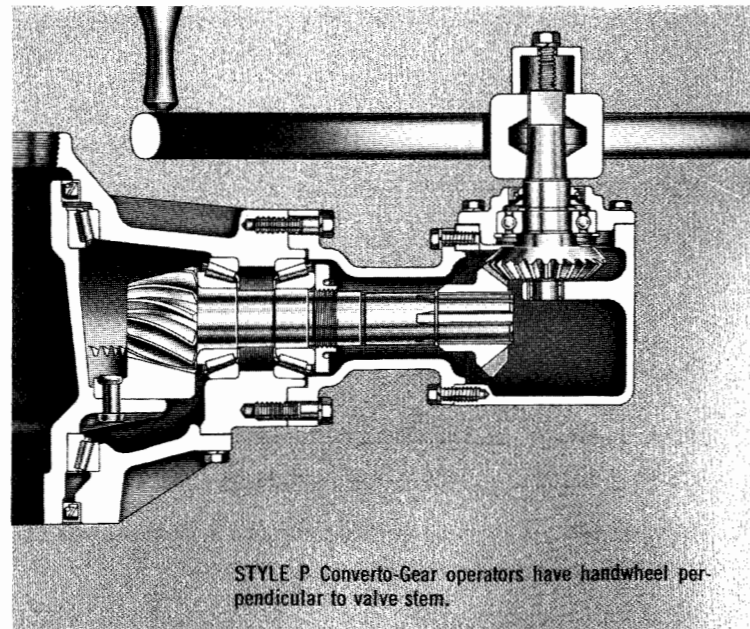
- Select from two styles—with handwheel parallel to or perpendicular to valve stem.
- Style N operators intended for service in locations where they are subject to extremely heavy accidental blows can be supplied with housings of Crane nodular cast iron (ductile cast iron) when specified.
- Stem protectors can be installed to protect exposed stems, or operator stem opening can be closed by a threaded plug in the case of nonrising-stem valves.
- Stem position indicators are available when ordered.
- Floor stands and stem extensions can be provided when location calls for it.

SPIRAL GEARING TOTALLY ENCLOSED FOR DEPENDABILITY, EFFICIENCY, DURABILITY

Converto-Gear operators are supplied in two styles—N and P—and in three gear ratios—3X, 4X, and 6X—to accommodate valve stems from $\frac{3}{4}$ to 4 inches in diameter. Illustrated is the 6X style N Converto-Gear operator. Construction details vary with the size and style of operator. Style P operators have a handwheel perpendicular to the valve stem and are used for installations in which space and accessibility requirements make the style N configuration impractical. Principal differences of the style P Converto-Gear operator are shown in an inset. Adapter parts used to install a Converto-Gear operator differ with the type of valve to be equipped. Insets illustrate typical arrangements.



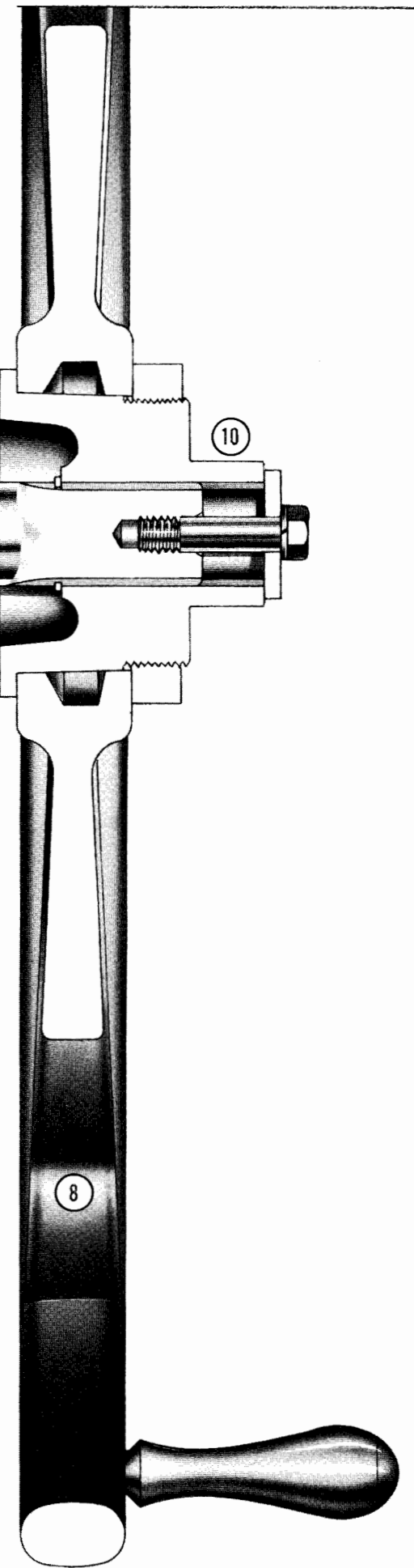
ADAPTERS FOR NONRISING-STEM VALVES incorporate new stuffing box in rigid casting to which operator is bolted.



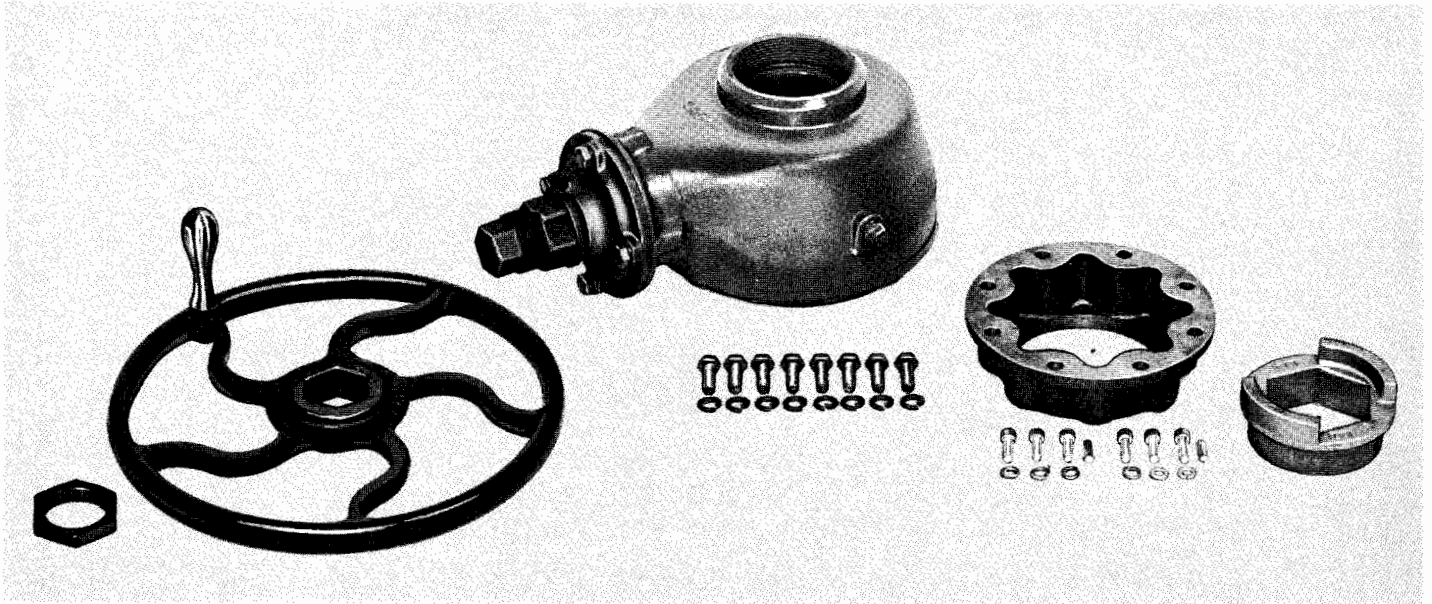
STYLE P Converto-Gear operators have handwheel perpendicular to valve stem.

- 1 Three oil seals retain gear lubricant and protect moving parts from dirt and water.
- 2 Antifriction bearings on each axis conserve effort.
- 3 3-, 4-, or 6-to-1 multiplication of force is provided by spiral-cut carburized alloy-steel bevel gears.
- 4 Driving lugs allow quarter-turn of gearing to develop momentum for hammerblow starting of tight valves.
- 5 Permanent gear lubricant suited to a wide range of operating environments never needs to be changed.
- 6 Heavy cast housing protects gears and bearings from dust, dirt, and contaminants.
- 7 Housing is threaded for

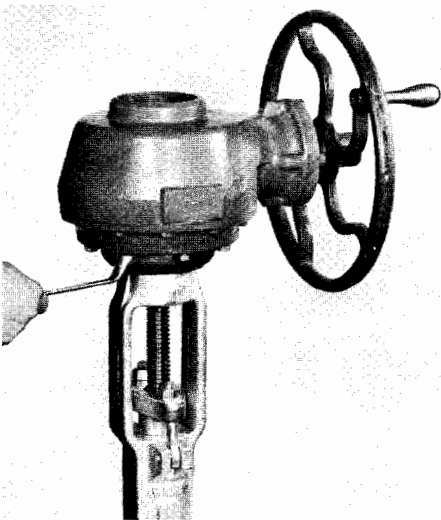
- plug or pipe stem protector, whichever is desired.
- 8 Malleable-iron handwheel with spindle is splined to hub.
- 9 Gasketed housing joints retain lubricant permanently.
- 10 Standard-size hexagon at hub of handwheel fits portable power wrench useful for speedy operation.
- 11 There is a yoke adapter to provide a rigid mount for the Converto-Gear operator on all types of valves.
- 12 Axis of handwheel can be selected for any direction (at 45-degree intervals) by means of housing bolts.
- 13 Sealed gear case permits installation in any plane allowed by design of valve.



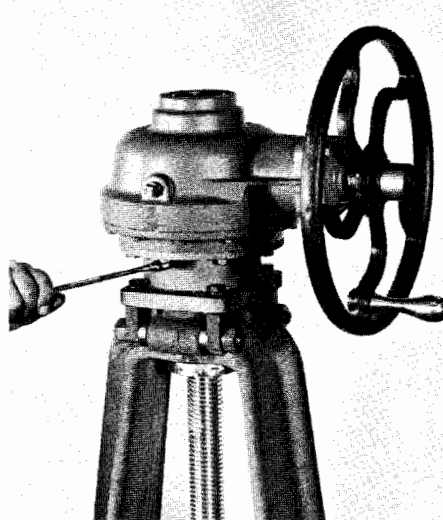
**INSTALL THE CONVERTO-GEAR OPERATOR YOURSELF...
WITHOUT REMOVING THE VALVE FROM THE LINE**



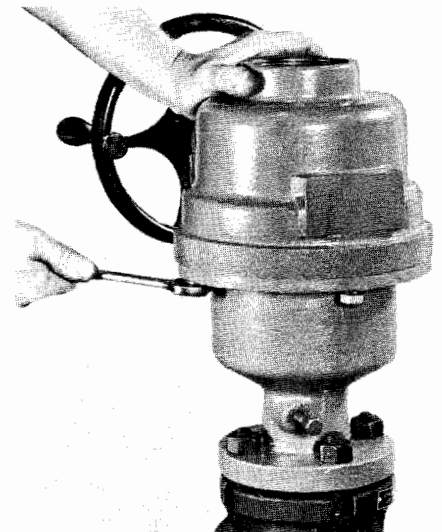
Converto-Gear operator kit can be ordered from stock, complete with all hardware and detailed instructions, ready to be mounted on a valve already installed in a line. Complete procedure can often be performed in less than half an hour by any competent mechanic with common hand tools.



Gate valves or conduit valves with plain yoke sleeve and solid hub are adapted for a Converto-Gear operator by means of a threaded adapter in a kit which replaces original yoke sleeve retaining nut.

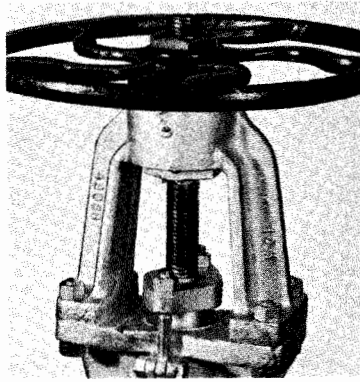


Gate valves with split-type yoke and similar valves require this adapter which is secured to yoke clamp studs. Adapter and new, longer studs are supplied in stock kit.

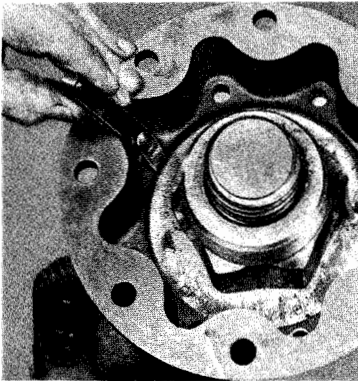


Gate valves with nonrising stem and bolted stuffing box and similar valves are adapted for Converto-Gear operation by replacing original stuffing box with new adapter from field-installation kit.

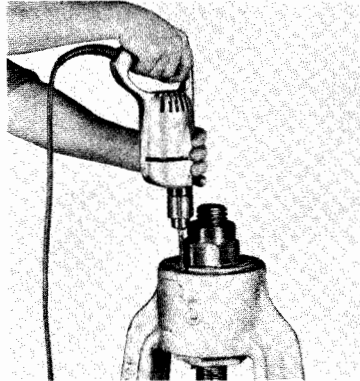
**FOR EXAMPLE, TO
ADAPT A VALVE
WITH OUTSIDE
STEM AND BALL-
BEARING YOKE...**



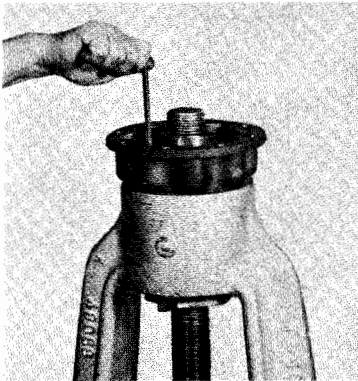
1 Remove handwheel,



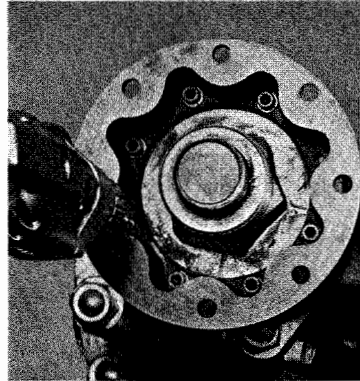
2 locate holes for
mounting yoke adapter,



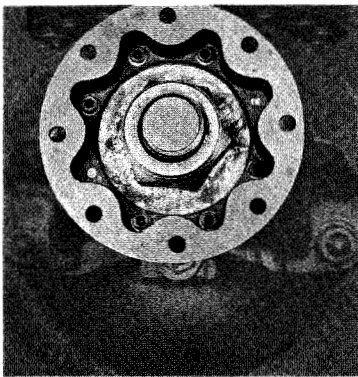
3 drill and tap six holes,



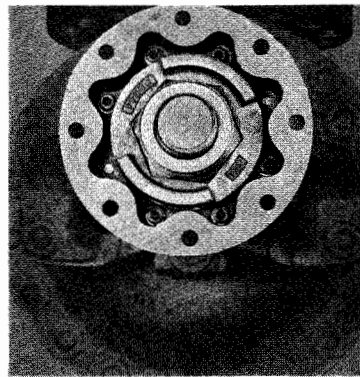
4 and mount yoke
adapter on yoke.



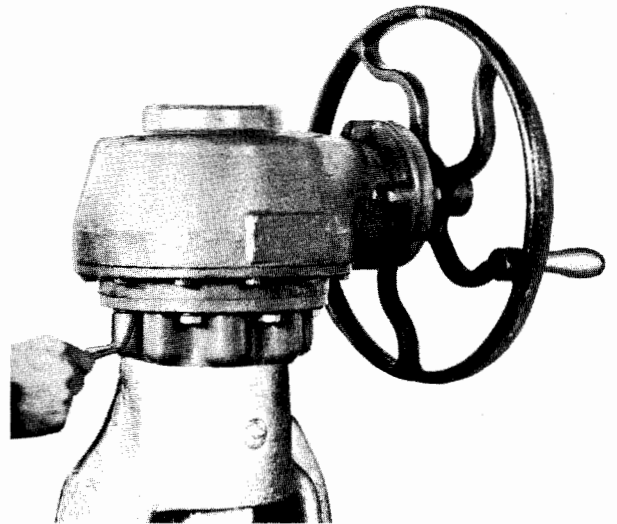
5 Drill two more holes
for locating pins.



6 and insert locating pins.

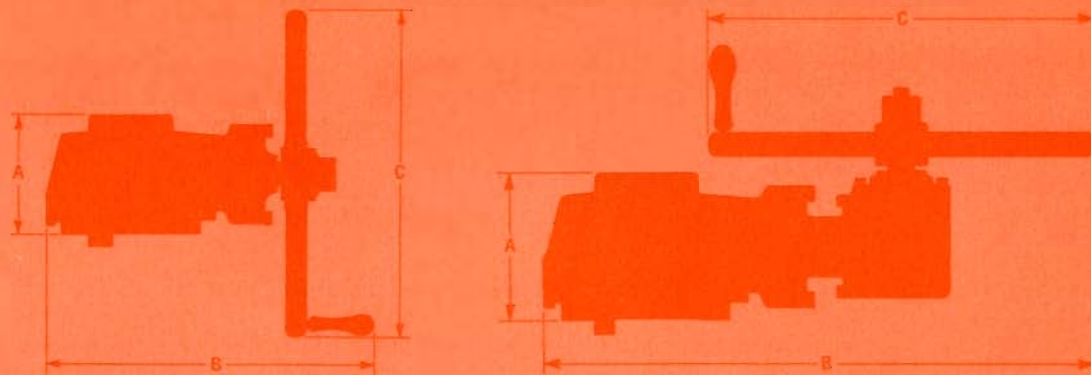


7 Assemble yoke sleeve
adapter on stem,



8 and bolt Converto-Gear operator in place.

DIMENSIONS ... WEIGHTS ... HOW TO ORDER



LEADING PARTICULARS

Converto-Gear Operator Size	DIMENSIONS (IN.)					
	STYLE N			STYLE P		
	Dim. A	Dim. B	Dim. C	Dim. A	Dim. B	Dim. C
3X	6 ¹¹ / ₁₆	14	6	7 ³ / ₁₆	10 ³ / ₁₆	9
	6 ¹¹ / ₁₆	16 ¹ / ₂	9	7 ⁷ / ₁₆	10 ⁷ / ₁₆	12
	6 ¹¹ / ₁₆	16 ¹ / ₂	12	7 ⁷ / ₁₆	10 ⁷ / ₁₆	16
	6 ¹¹ / ₁₆	16 ¹ / ₂	16			
	6 ¹¹ / ₁₆	16 ¹ / ₂	20			
4X	8	20 ³ / ₁₆	16	8 ¹ / ₃₂	13 ¹ / ₄	12
	8	20 ⁹ / ₁₆	20	8 ¹ / ₃₂	13 ¹ / ₄	16
	8	20 ⁹ / ₁₆	24	8 ¹ / ₃₂	13 ¹ / ₄	20
	8	20 ¹¹ / ₁₆	30			
6X	12 ⁵ / ₃₂	26 ¹ / ₄	20	12	16 ⁵ / ₈	16
	12 ⁵ / ₃₂	26 ¹ / ₄	24	12	16 ⁵ / ₈	20
	12 ⁵ / ₃₂	26 ¹ / ₄	30	12	16 ⁵ / ₈	24

HOW TO ORDER A CRANE CONVERTO-GEAR VALVE OPERATOR

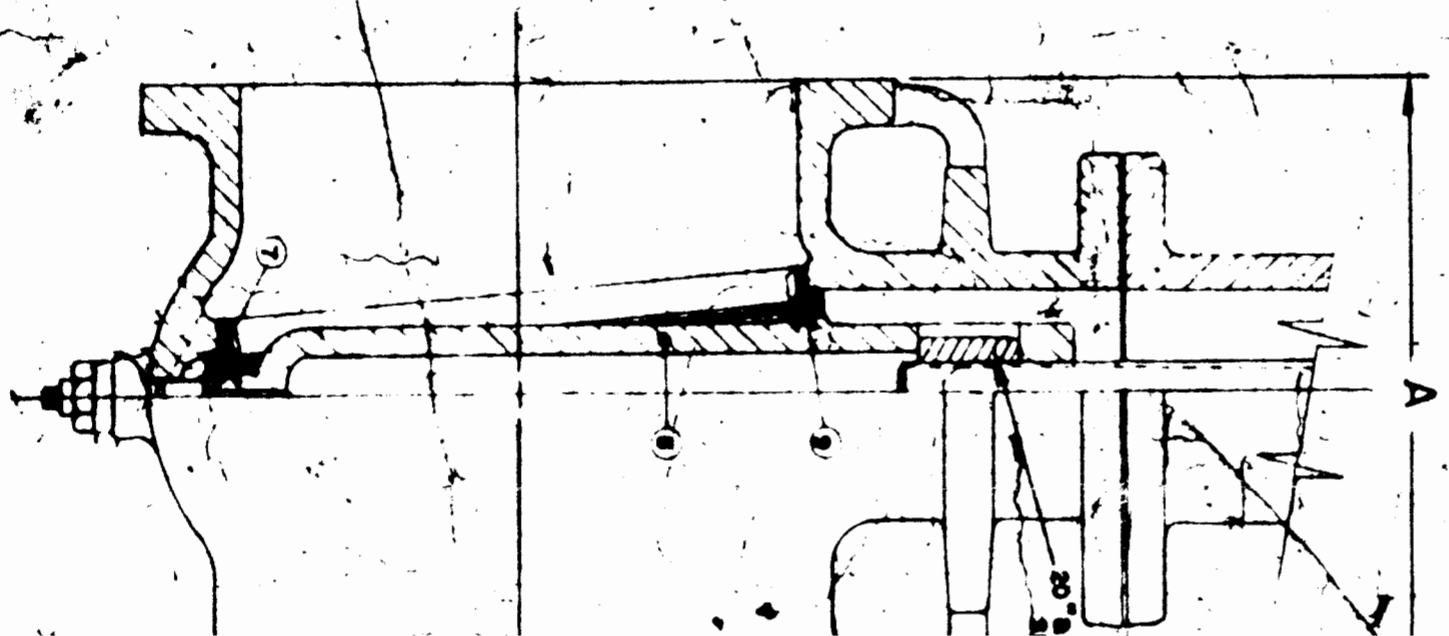
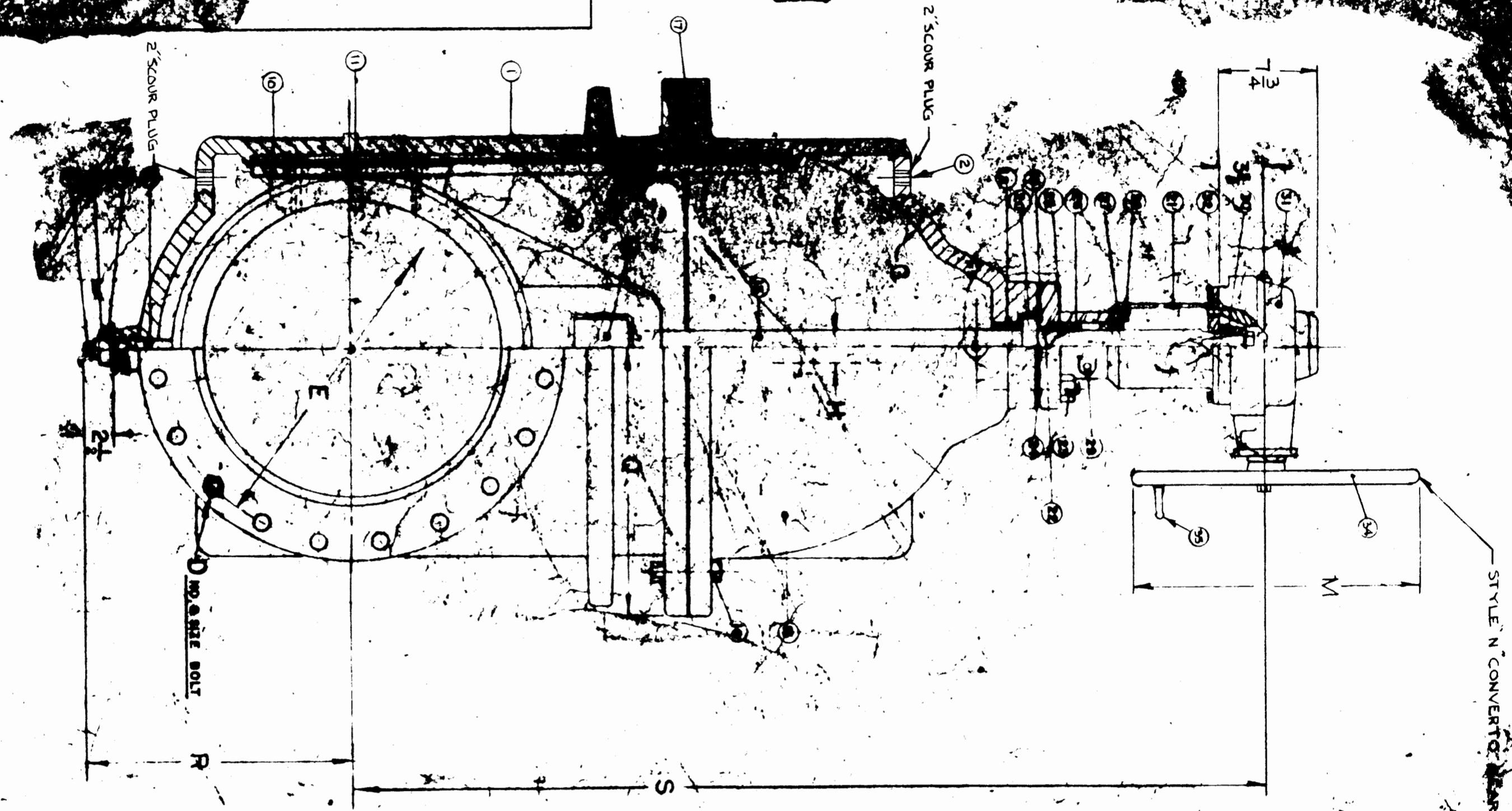
Plan now to power up difficult valves with Crane Converto-Gear operators! These compact, powerful manual gear operators are stock items that can be shipped promptly from Crane Co. inventory—without delays for special work. Basic selection of the size and style of Converto-Gear operator you need for each valve—and the standard options—can be made from the data in this catalog. Your Crane Co. representatives can give you exact prices immediately for the operators you select, whether for factory installation or for on-the-job installation by your own mechanic.

To order Converto-Gear operators for field installation on valves already in service, please provide full identification of each valve to be equipped. Crane Co. products are described fully by listing their (1) style, (2) size, (3) pressure class, and (4) catalog number. In the case of obsolete types of valves, please supply also (5) date of manufacture, if known, (6) a dimensional sketch of the yoke sleeve as seen with handwheel removed, (7) a dimensional sketch of the yoke hub end and bearing, or of the bonnet and stuffing box, as applicable, and (8) the locations, dimensions, and thread data for all bolts, studs, and holes in the end of the stem and in the yoke, bonnet, or stuffing box. **NOTE:** Please consult the factory when ordering Converto-Gear operators for valves with non-rising stems.

CRANE

CRANE CO.

VALVES • PUMPS • FITTINGS • WATER TREATMENT • PIPING • PLUMBING • HEATING • AIR CONDITIONING
4100 South Kedzie Avenue, Chicago, Illinois 60632



MCH

MSH-5-6279

SIZE	A	B	C	D	E	G	H	M	Q	R	S	T
30	26	38	21	28	36	14	24	20				

24 15 180

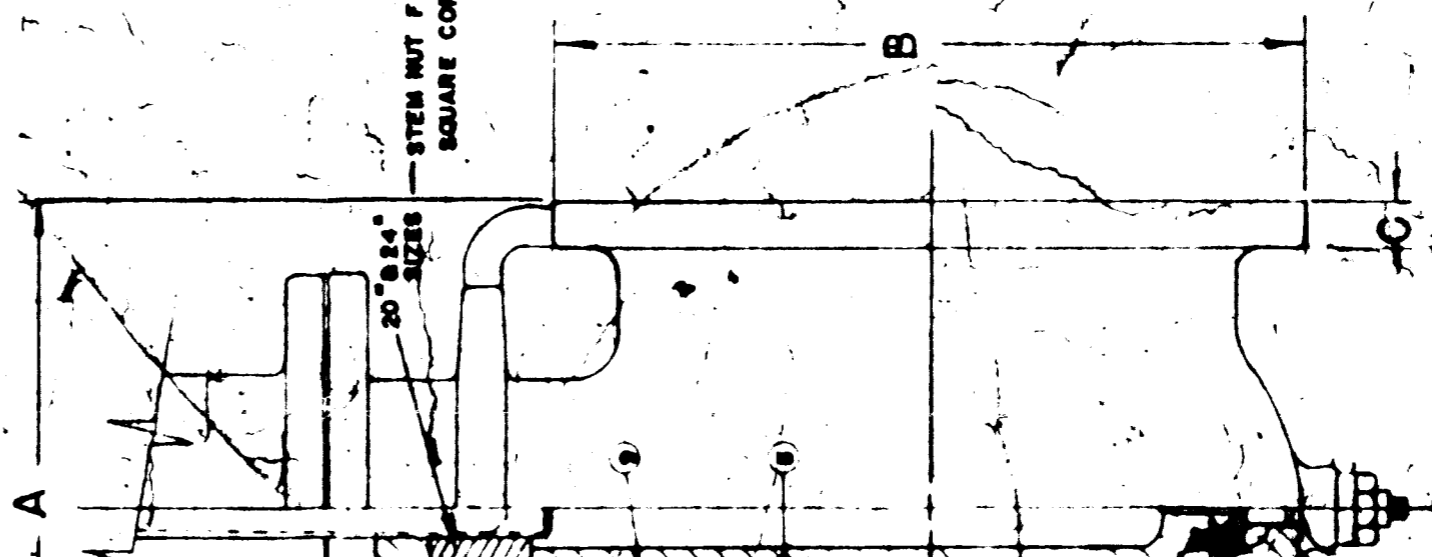
ITEM NO.	PART	MATERIALS	SPECIFICATIONS
1	BODY	CAST IRON	ASTM A 126 CL B
2	SCOUR HOLE PLUG	BRASS	TO ORDER
3	GATE STOP	BRONZE	ASTM B 62-52
4	GATE STOP NUT	"	"
5	LOCK WASHER	COPPER	SHEET COPPER
6	"O" RING	RUBBER	COMMERCIAL
7	SEAT RINGS	BRONZE	ASTM B 62-52
8	DISC	CAST IRON	ASTM A 126 CL B
9	DISC RING	BRONZE	ASTM 45
10	DISC GUIDE SHOE	"	ASTM B 62-52
11	GUIDE CAP SCREW	"	ASTM B 21-64
12	BONNET/BONNET BLADE	"	ASTM B 62-52
13	STEM	"	ASTM B 152
14	STEM NUT	"	"
15	BONNET	CAST IRON	ASTM A 126 CL B
16	BONNET BOLTS	RUSTPROOF STEEL	ASTM A 307 GR B
17	BONNET BASKET	RUBBER	THICK CLOTH RUBBER
18	BONNET BUSHINGS	BRONZE	ASTM B 62-52
19	THRUST WASHER	"	"

ITEM NO.	PART	MATERIALS	SPECIFICATIONS
20	STEM RECESS BUSH	BRONZE	ASTM B 62-52
21	CONVERTO ADAPT & STUFFING BOX	CAST IRON	ASTM A 126 CL B
22	STUFFING BOX BUSH	BRONZE	ASTM B 62-52
23	ADAPTOR NUTS/BUSH	RUSTPROOF STEEL	ASTM A 307 GR B
24	ADAPTOR GASKET	RUBBER	THICK CLOTH RUBBER
25	PACKING	ASBESTOS GRAPHITE PLASTIC STICKS	JEWELRY RING DEJCO STEEL PACKING
26	"	"	"
27	PACKING PLATE	STEEL	AISI-C1018-1020
28	PACKING PLATE BUSH	RUSTPROOF STEEL	ASTM A 307 GR B
29	INJECTOR SCREW	"	S.A.E. 5007
30	STEM ADAPTOR	CAST IRON	ASTM A 126 CL B
31	CONVERTO UNIT	"	STEEL
32	UNIT CAP SCREWS	RUSTPROOF STEEL	ASTM A 307 GR B
34	HANDWHEEL	MALL IRON	"
35	HANDLE FOR WHEEL	STEEL	ASTM A 107

STEM NUT FITTED TO SQUARE CORE IN DISC.

SPECIAL DWG. FOR CANADIAN INTERNATIONAL COMSTOCK SOUTH END WATER POLLUTION CONTROL CENTRE, WINNIPEG FOR HORIZONTAL STEM INSTALLATION & COUNTERCLOCKWISE OPENING.

DWG M401



APPROVED
 VARIATION FROM PLANS AND SPECIFICATIONS NOT AUTHORIZED
 MARI 6 1972 DK
 W. L. WARDROP & ASSOCIATES
 ENGINEERING
 WINNIPEG, CANADA

CONFIRMS TO A.W.W.A. SPEC. C500-61

SOUTH END PLANT
 RECEIVED
 MAR - 8 1972
 W. L. WARDROP & ASSOCIATES

DRAWN	T. MERRITT
CHECKED	
EXAMINED	
NOTED	
APPROVED	

McAMTY MILWOOD GATE VALVE
 SHOWING 2 SCOUR HOLES & N CONNERTO GEARING

CRANE

SCALE: 1" = 1'-0" FEB 22/72

DRAWING No. MSH-5-6279

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