

MOTOR VALVES
3 WAY SERIES



KIMRAY
INC.®

SECTION E4

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DIAPHRAGM BALANCED

APPLICATION:

Three-Way Valves provide a convenient means for diverting flow from one pipeline to another, for bypass applications where part or all of the fluid passing through the valve is diverted through either or both of the outlets, or as a mixing valve for combining two fluid streams and discharging them through a common outlet port.

Material	Operating Pressure	Description of Operation	Parts List
Ductile Iron	125 psig Max.	Pg. 10.1	Pg. 10.2

PISTON BALANCED

APPLICATION:

Three-Way Valves provide a convenient means for diverting flow from one pipeline to another, for bypass applications where part or all of the fluid passing through the valve is diverted through either or both of the outlets, or as a mixing valve for combining two fluid streams and discharging them through a common outlet port.

Material	Line Size	Operating Pressure	Description of Operation	Parts List
Ductile	2"	250/400 psig Max.	Pg. 10.1	Pg. 10.3
Ductile	3"	250/400 psig Max.	Pg. 10.1	Pg. 10.4
Steel	2"	285/400 psig Max.	Pg. 10.1	Pg. 10.5

SPLITTER VALVE

APPLICATION:

Three-Way Valves provide a convenient means for diverting flow from one pipeline to another, for bypass applications where part or all of the fluid passing through the valve is diverted through either or both of the outlets, or as a mixing valve for combining two fluid streams and discharging them through a common outlet port.

Material	Line Size	Operating Pressure	Parts List
Steel	2"	3000 psig Max.	Pg. 20.1

MOTOR VALVE

APPLICATION:

Three-Way Valves provide a convenient means for diverting flow from one pipeline to another, for bypass applications where part or all of the fluid passing through the valve is diverted through either or both of the outlets, or as a mixing valve for combining two fluid streams and discharging them through a common outlet port.

Material	Line Size	Operating Pressure	Parts List
Steel	2"	3000 psig Max.	Pg. 20.2
Steel	1"	3000 psig Max.	Pg. 30.1

LOWER PORT CLOSED:

Steel	1"	3000 psig Max.	Pg. 30.2
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ELASTOMERS

AFLAS® is a trade mark of Asahi Glass Co

TEMPERATURE:

+30° to +500° F
0° to +260° C

APPLICATION:

Crude Oil & Gas Production (High heat), Steam Flood Production Chemicals (corrosion inhibitors) Amine Sweetener Systems, Gasoline, Diesel, Fuel Oil Systems

FLUID / GAS:

Crude Oil & Gas Production, H₂S, Steam, Petroleum fluids, Sea Water

HSN (HNBR)

TEMPERATURE:

-15° to +300° F
-26° to +149° C

APPLICATION:

Crude Oil & Gas Production w/ H₂S, Wet CO₂

FLUID / GAS:

Crude Oil & Gas, H₂S, Wet CO₂, Sea Water

NITRILE

TEMPERATURE:

Buna-N:
-40° to +220° F
-40° to +105° C
Low-Temp:
-85° to +120° F
-65° to +49° C

APPLICATION:

Crude Oil & Gas Production Glycol Dehydrators, Gasoline, Jet Fuel & Diesel Fuel Pumping, Water Disposal, Methanol Injection Pumps, Water pump seals, hydraulic pump seals

FLUID / GAS:

Crude Oil & Gas, Good to Poor in Sour Production (See HSN), Water, Glycols, Hydraulic Oils, Resistance to crude oil in the presence of H₂S and amines, Diesel fuel, fuel oils

DO NOT USE WITH:

Aromatic hydrocarbons, chlorinated hydrocarbons, phosphate esters (hydraulic fluids)

TEFLON (T)

TEMPERATURE:

-40° to +400° F
-20° to +204° C

APPLICATION:

Chemically Inert Elastomer Best in static Do not use at low temps

FLUID / GAS:

Almost All Chemicals

VITON® is a trade mark of Dupont

TEMPERATURE:

-10° to +350° F
-23° to +177° C

APPLICATION:

Crude Oil & Gas Production, Glycol Dehydrators, Gasoline, Jet Fuel & Diesel Fuel Pumping, Water Disposal, Methanol Injection Pumps. (Also Vacuum Service) (Gas permeability is very low)

FLUID / GAS:

Crude Oil & Gas, H₂S, Propane, Gasoline, Diesel, Fuel Oil Systems

DO NOT USE WITH:

Hot Water, Not preferred for wet CO₂, Methyl Alcohol, Amines, Sodium hydroxide solutions

POLYURETHANE (P)

TEMPERATURE:

-40° to +220° F
-40° to +104° C

APPLICATION:

High abrasion resistance Seats, Diaphragms

FLUID / GAS:

Crude Oil gas and Water, H₂S, propane, butane, fuel, mineral oil and grease

FEATURES:

- Soft seats
- Tight shut-off
- Balanced design
- Removable seats
- Minimum maintenance
- Valve position indicator
- All internal parts can be removed with valve in line.

DIAPHRAGM PRESSURE:

10 to 100 psig

CONSTRUCTION:

Bodies & diaphragm housings are available in a choice of either ductile or iron or steel castings. Valve stem is a type of 303 stainless. Diaphragms and seat materials are reinforced oil resistant synthetic rubber. Each valve is given a complete operational test after assembly. Standard maximum service temperature is 225° F. Modification for service temperature of 350° F. is available as and "extra", when specified on order.

125# W.P. are Diaph. Balance Valves.

400# W.P. are Piston Balance Valves.

Cf & Cv VALUES			
Line Size	Cf	Cv Upper Port	Cv Lower Port
2"	0.79	36.4	32.0
3"	0.79	81.0	72.0

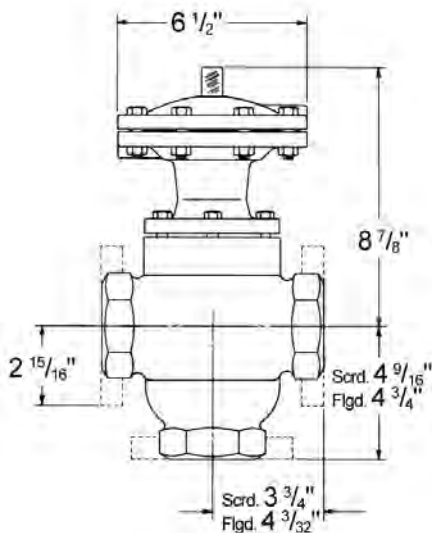
2" CAPACITY - Bbls. Water/Day, Steady Flow

DIRECTION OF FLOW	PRESSURE DROP ACROSS VALVE - PSIG											
	1	2	3	4	5	10	15	20	30	40	50	60
* PRODUCTION	1,250	1,800	2,200	2,500	2,800	4,000	-----	-----	-----	-----	-----	-----
† TEST	1,100	1,550	1,900	2,200	2,500	3,450	4,250	4,900	6,000	6,950	7,800	8,500
† TEST	PRESSURE DROP ACROSS VALVE - PSIG											
	70	80	100	120	140	160	180	200	225	250	275	300
† TEST	9,200	9,800	11,000	12,000	13,000	14,000	14,750	15,500	16,500	17,400	18,200	19,000

*Pressure drops greater than 10 psig will cause lower seat to leak.

†On diaphragm balanced valves, with "Production" side of valve at 0 psig, "Test" pressures greater than 30 psig will invert Diaphragm #335 and should be avoided. Use Piston Balanced Valve

DIMENSIONS

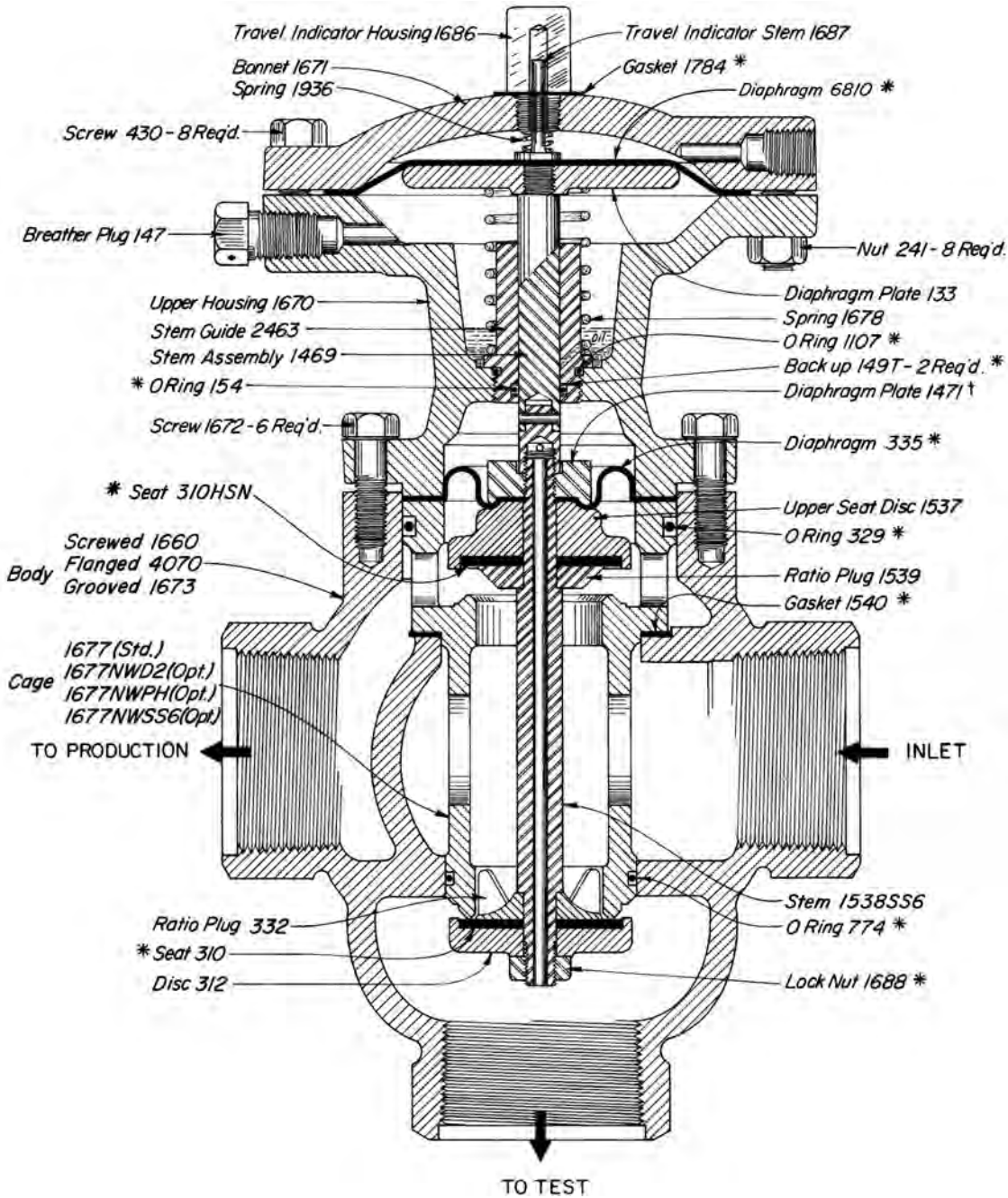


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3 WAY MOTOR VALVES



DIAPHRAGM BALANCED
DUCTILE IRON



VALVES AVAILABLE:

CAT. NO.	SIZE TYPE	MOTOR VALVES	OPER. PRES.	MAX W.P.	KIT
ERM	2" SCRD.	212 S3W-D-LPC	125	400	RHP
ERN	2" GRVD.	212 G3W-D-LPC	125	400	RHP
ERO	2" FLGD.	212 F3W-D-LPC	125	250	RHP

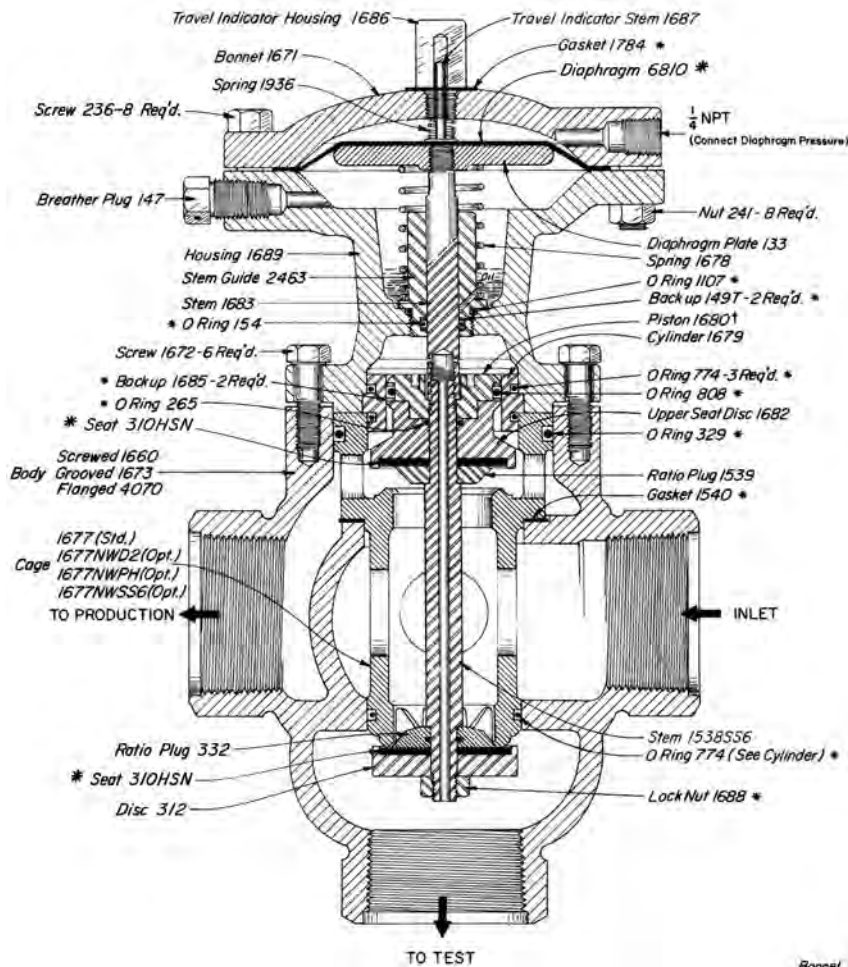
NOTES:

† To remove Diaphragm Plate 1471, use Spanner Wrench 1471SNW.

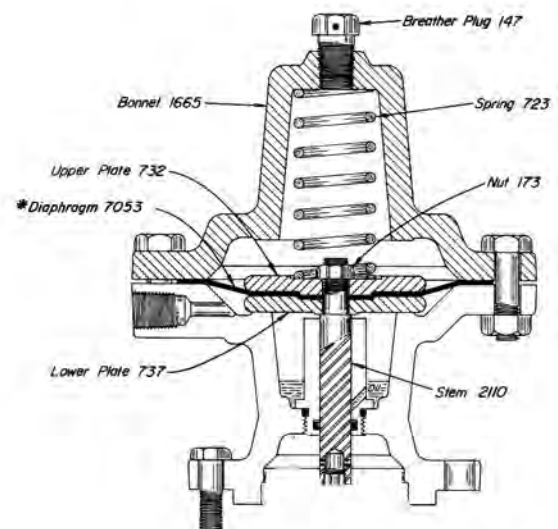
*These are recommended spare parts and are stocked as repair kits.

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LOWER PORT CLOSED



LOWER PORT OPEN



VALVES AVAILABLE:

CAT. NO.	SIZE TYPE	MOTOR VALVES	OPER. PRES.	MAX W.P.	KIT
ERL	2" FLGD.	218 F3W-D-LPO	250	250	RHY
ERP	2" SCR.D.	240 S3W-D-LPC	400	400	RHX
ERQ	2" FLGD.	218 F3W-D-LPC	250	250	RHX
ERR	2" GRVD.	240 G3W-D-LPC	400	400	RHX
ERS	2" SCR.D.	240 S3W-D-LPO	400	400	RHY
ERT	2" GRVD.	240 G3W-D-LPO	400	400	RHY

NOTES:

† To remove Piston 1680, use Spanner Wrench 1471SNW.

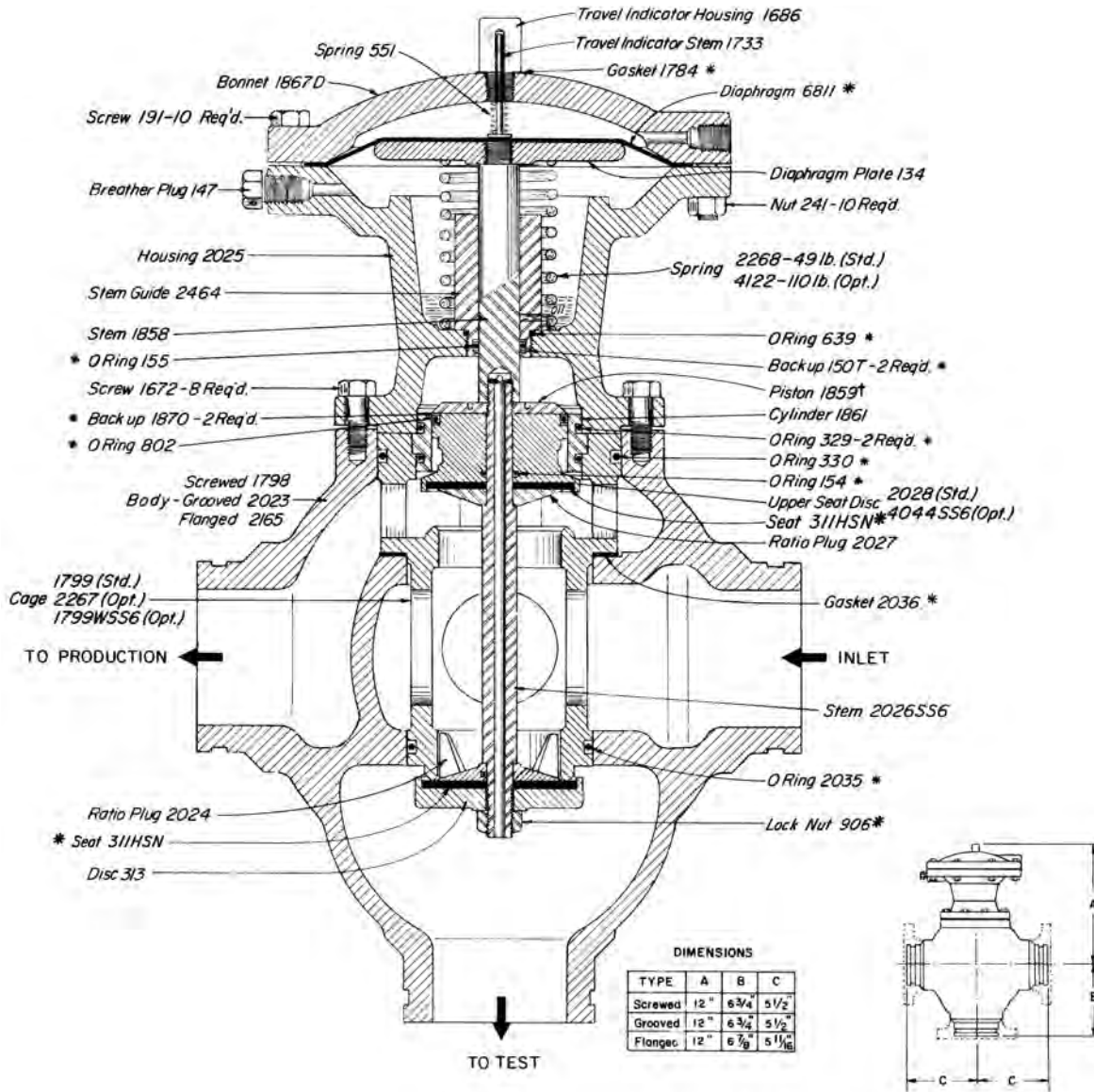
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3 WAY MOTOR VALVES



PISTON BALANCED
DUCTILE IRON



DIRECTION OF FLOW	PRESSURE DROP ACROSS VALVE - P.S.I.											
	1	2	3	4	5	10	15	20	30	40	50	60
PRODUCTION	2800	4050	4950	5600	6300	9000						
TEST	2500	3500	4250	4950	5600	7750	9550	11,000	13,500	15,600	17,500	19,100
	PRESSURE DROP ACROSS VALVE - P.S.I.											
	70	80	100	120	140	160	180	200	225	250	275	300
TEST	20,700	22,000	25,000	27,000	29,000	31,000	33,400	34,800	35,100	39,200	41,000	42,700

VALVES AVAILABLE:

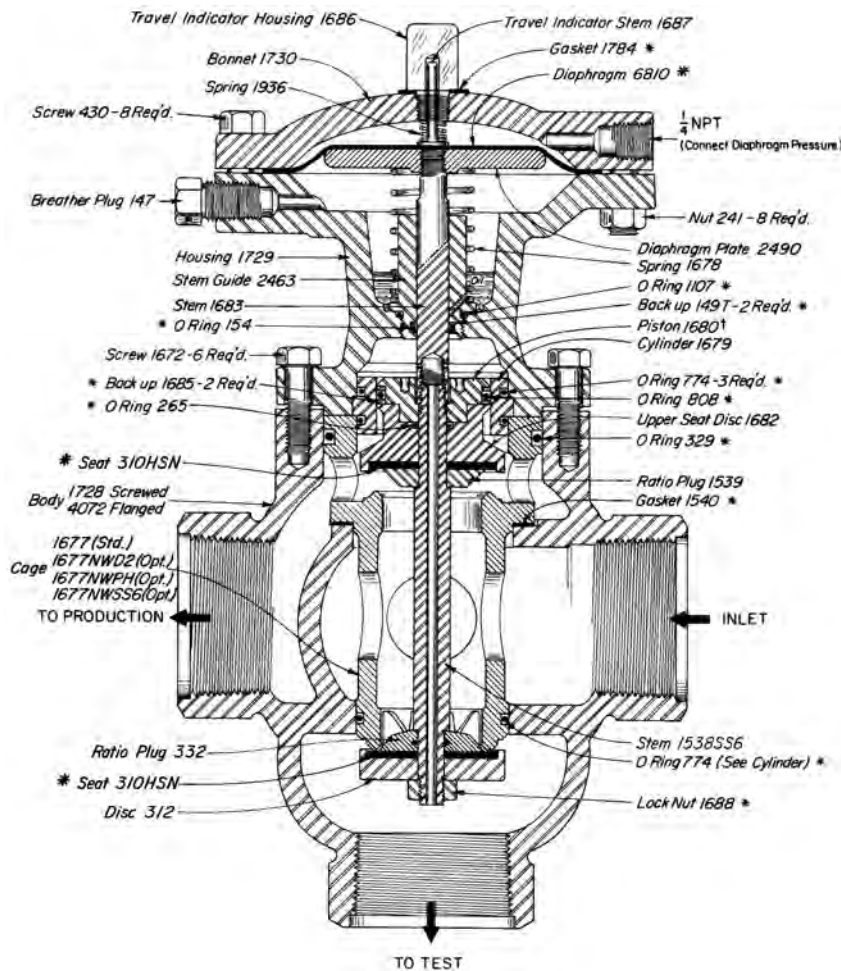
CAT. NO.	SIZE TYPE	MOTOR VALVES	OPER. PRES.	MAX W.P.	KIT
ERU	3" SCRD.	340 S3W-D-LPC	400	400	RHT
ERW	3" GRVD.	340 G3W-D-LPC	400	400	RHT
ERX	3" FLGD.	318 F3W-D-LPC	250	250	RHT

NOTES:

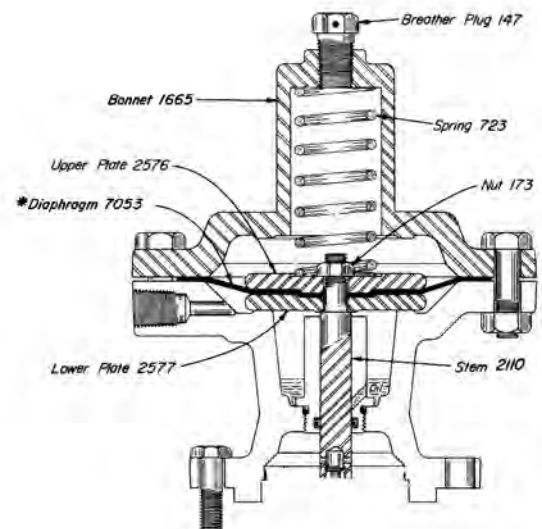
† To remove Piston 1859, use Spanner Wrench 1859SNW.
 *These are recommended spare parts and are stocked as repair kits.
 3" CAPACITY - Bbls. water/day - Steady Flow

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LOWER PORT CLOSED



LOWER PORT OPEN



THRU VALVES AVAILABLE:

CAT. NO.	SIZE TYPE	MOTOR VALVES	OPER. PRES.	MAX W.P.	KIT
ERY	2" SCR.D.	240 S3W-S-LPC	400	400	RHX
ERZ	2" SCR.D.	240 S3W-S-LPO	400	400	RHY
ESY	2" FLGD.	228 F3W-S-LPC	285	285	RHX
EUL	2" FLGD.	228 F3W-S-LPO	285	285	RHX

NOTES:

† To remove Piston 1680, use Spanner Wrench 1471SNW.

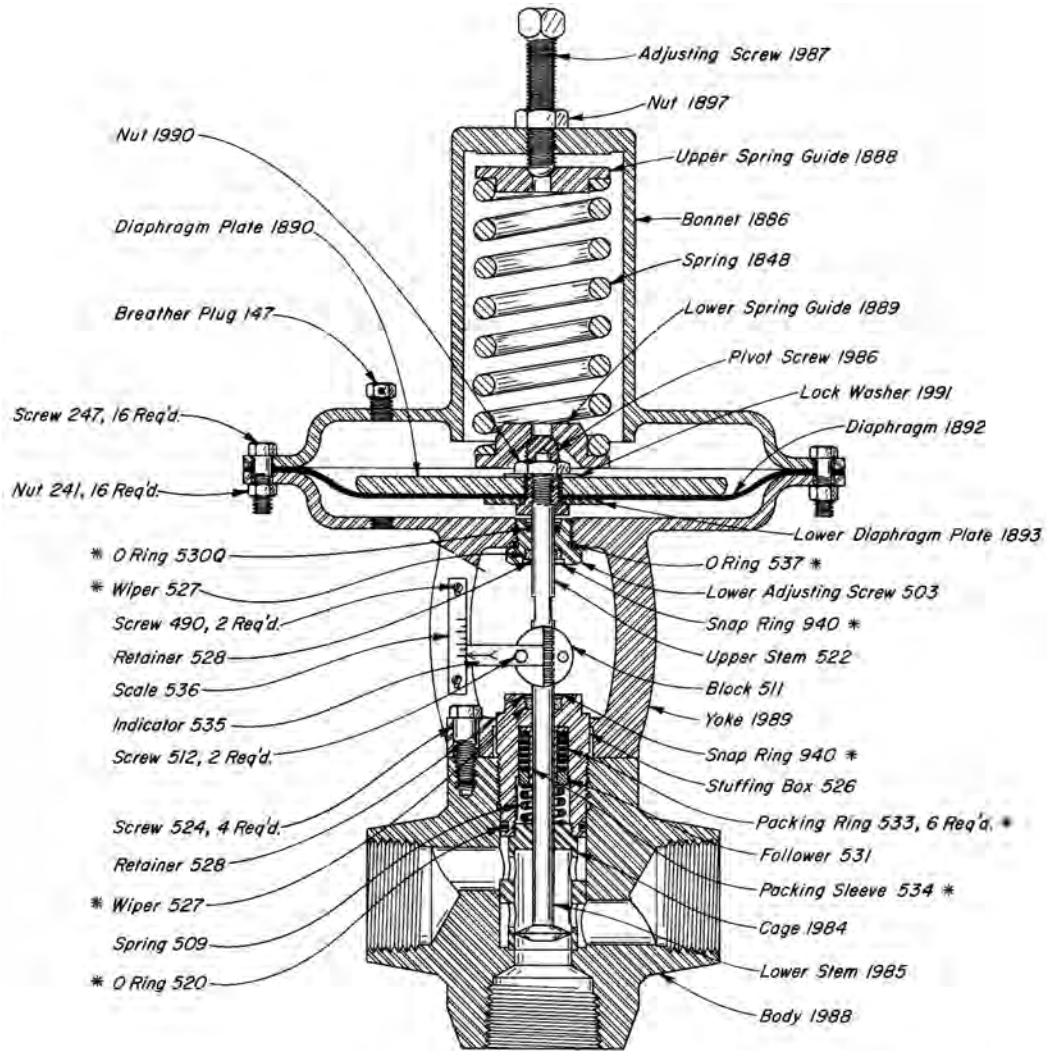
*These are recommended spare parts and are stocked as repair kits.

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NOTES:



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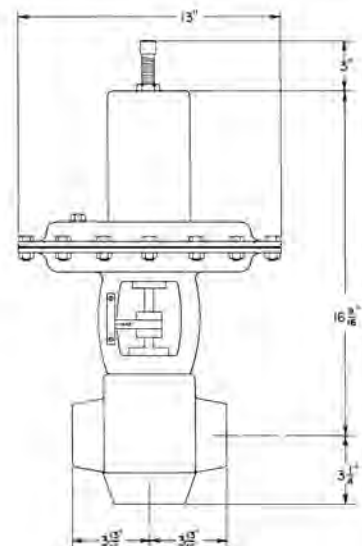
Cf & Cv VALUES			
Line Size	Cf	Cv Upper Port	Cv Lower Port
2"	0.70	7.5	10.5

VALVES AVAILABLE:

CAT. NO.	SIZE TYPE	MOTOR VALVES	OPER. PRES.	MAX W.P.	KIT
ESC	2" SCRD.	2300 SDV-S	3000	3000	RFG

Flange Body available. Specify Flange Type when ordering.

*These are recommended spare parts and are stocked as repair kits.



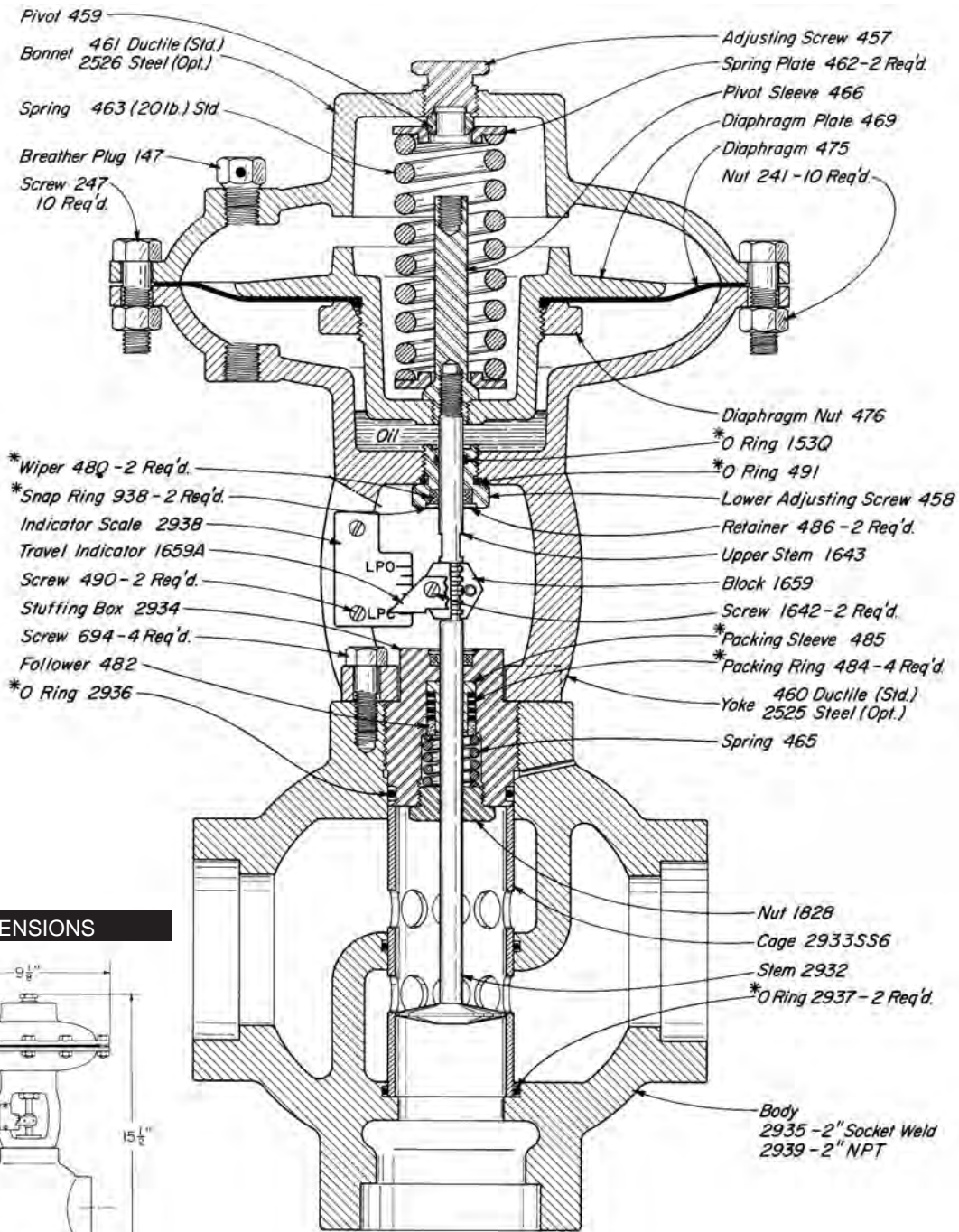
DIMENSIONS

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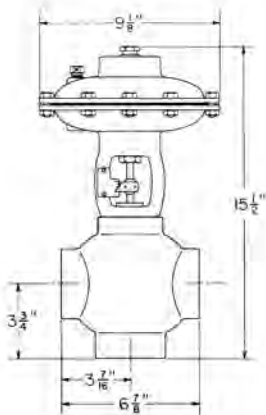
3 WAY MOTOR VALVES



2" HIGH PRESSURE
STEEL



DIMENSIONS



Cf & Cv VALUES			
Line Size	Cf	Cv Upper Port	Cv Lower Port
2"	0.70	27.7	38.1

VALVES AVAILABLE:

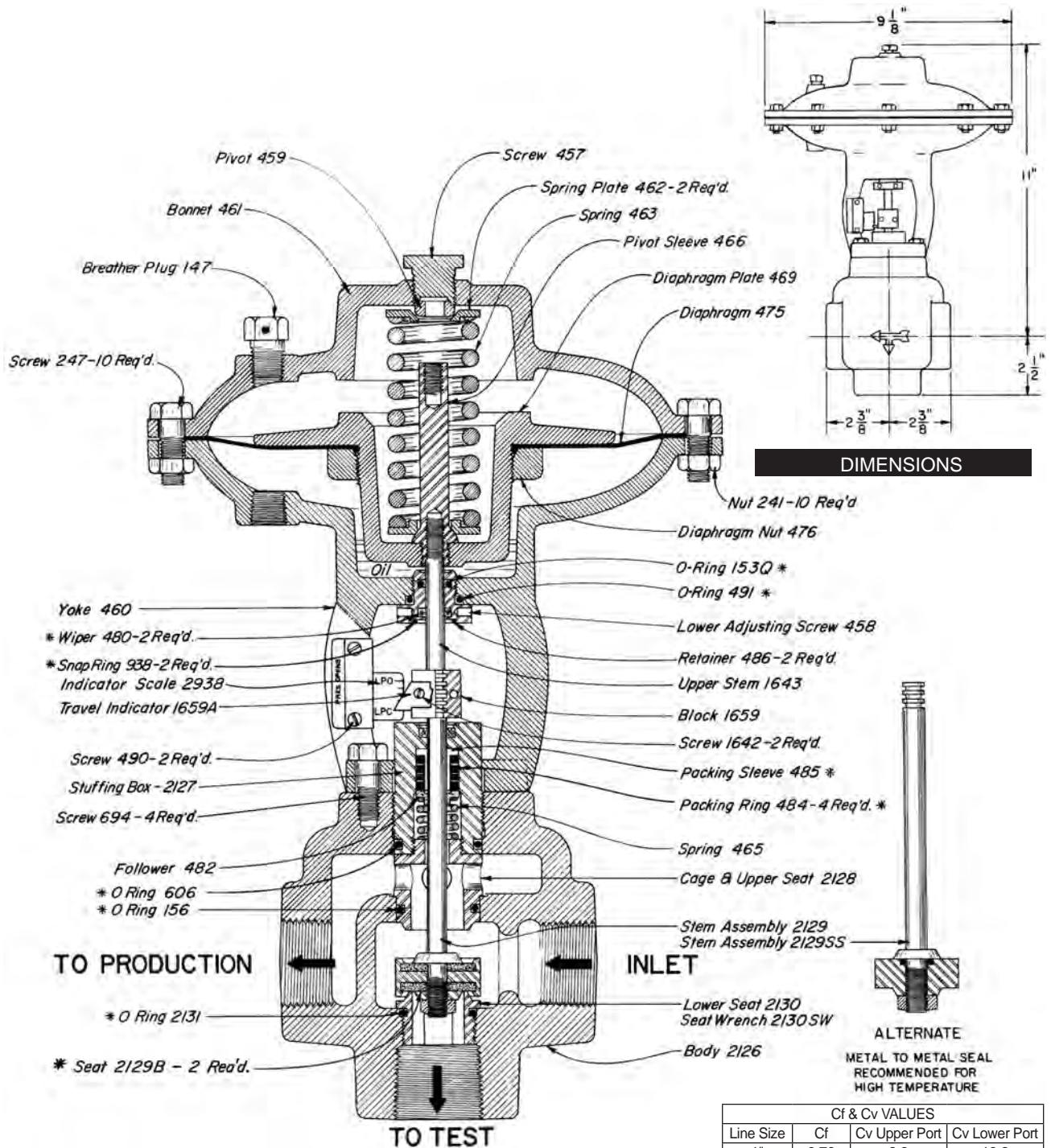
CAT. NO.	SIZE TYPE	MOTOR VALVES	OPER. PRES.	MAX W.P.	KIT
ESH	2" WELD.	2300 WD3W	3000	3000	RRG
ESI	2" SCR.D.	2300 SD3W	3000	3000	RRG

NOTES:

Ductile topworks standard. All steel topworks available on request.

*These parts are recommended spare parts and are stocked as repair kits.

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VALVES AVAILABLE:

CAT. NO.	SIZE TYPE	MOTOR VALVES	OPER. PRES.	MAX W.P.	KIT
ESD	1" SCR.D.	1300 S3W-S-LPC	3000	3000	RFC
ESE	1" SCR.D.	1300 S3W-S-LPO	3000	3000	RFC

NOTES:

(For LPO conversion refer to Section E1, Conversion Instruction 1" Motor Valve)

Ductile topworks standard. All steel topworks available on request.

*These are recommended spare parts and are stocked as repair kits.

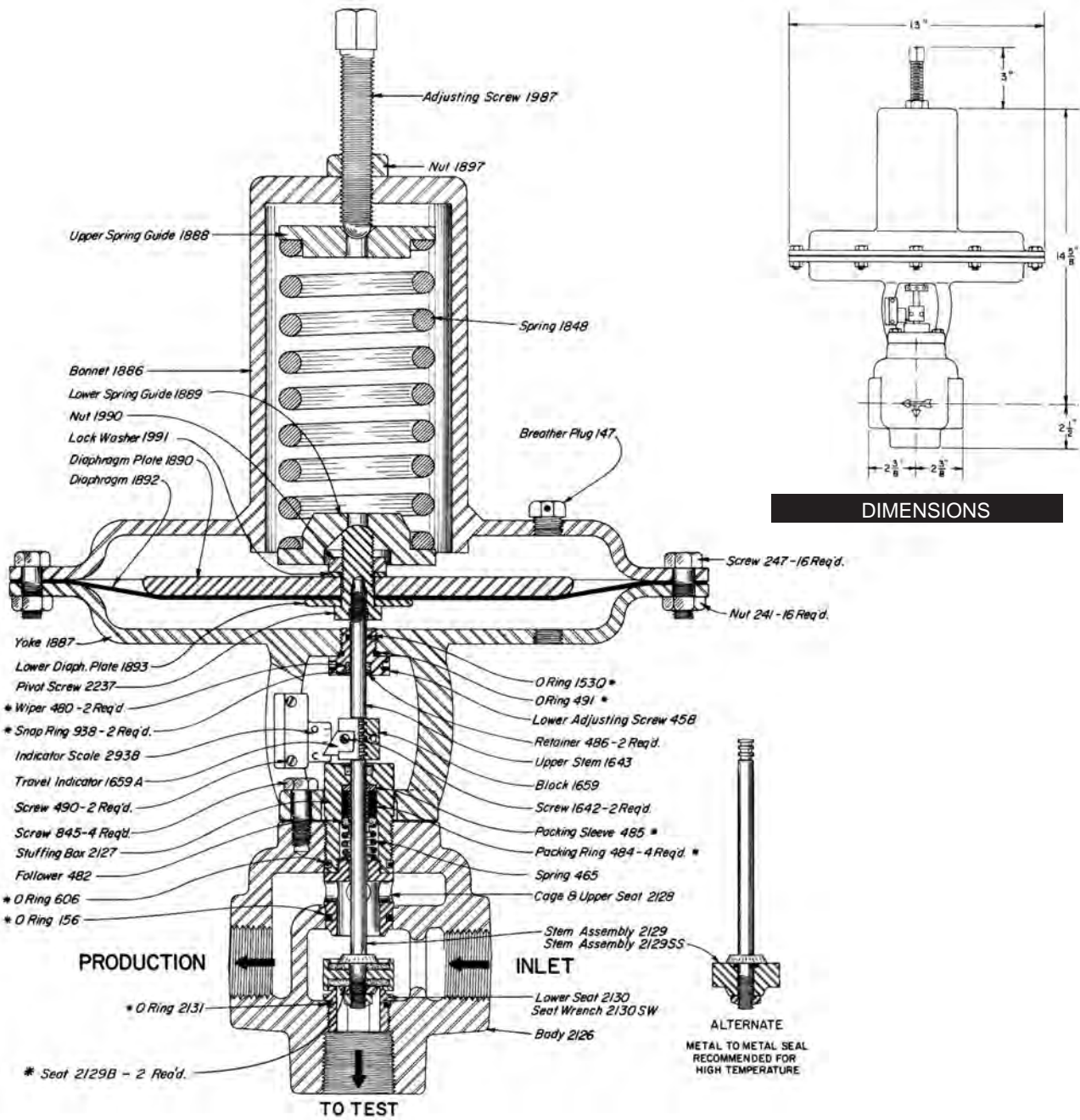
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Cf & Cv VALUES			
Line Size	Cf	Cv Upper Port	Cv Lower Port
1"	0.70	8.3	13.8

3 WAY MOTOR VALVES



1" HIGH PRESSURE (LOWER PORT CLOSED ONLY)
STEEL



VALVES AVAILABLE:

CAT. NO.	SIZE TYPE	MOTOR VALVES	OPER. PRES.	MAX W.P.	KIT
ESF	1" SCR.D.	1300-65-S3W-S-LPC	3000	3000	RFC

NOTES:

*These are recommended spare parts and are stocked as repair kits.

Cf & Cv VALUES			
Line Size	Cf	Cv Upper Port	Cv Lower Port
1"	0.70	8.3	13.8