Uniflex-Stow ™

"The Solution in Remote Valve Drive Technology"

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Remote mechanical valve control for marine, nuclear and industrial installations

Uniflex-Stow ™

"The Solution in Remote Valve Drive Technology"

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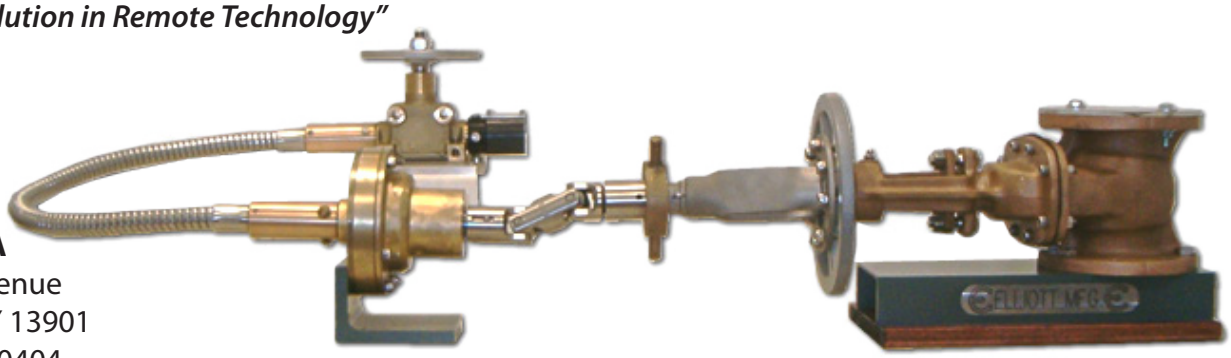
Elliott's Uniflex –Stow system is the most versatile, reliable and proven approach to remote mechanical valve actuation available today. The Uniflex-Stow system is a unique answer to the problem of remote mechanical valve actuation. When a valve is in a hazardous or hard-to-reach position, and must be actuated, then Uniflex-Stow solves the problem. It is the safe and reliable way to actuate almost any valve. If you are still specifying or using out-of-date chains dual cable systems, linear systems or make-shift solid rod and UJ systems then think Uniflex-Stow - proven, reliable, virtually no maintenance and easy to plan and install.

The Stow brand has been solving remote mechanical control problems for over 100 years. Elliott Manufacturing has combined the experience with new product development to deliver ***"The Solution in Remote Technology"***



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"The Solution in Remote Valve Drive Technology"

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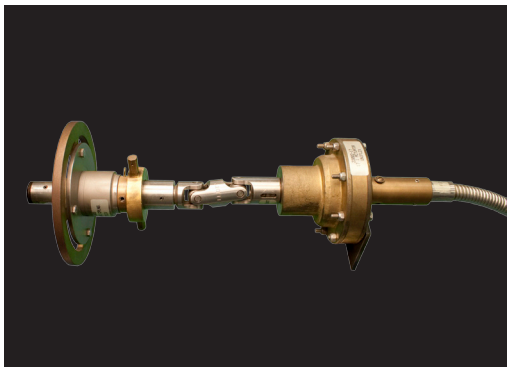
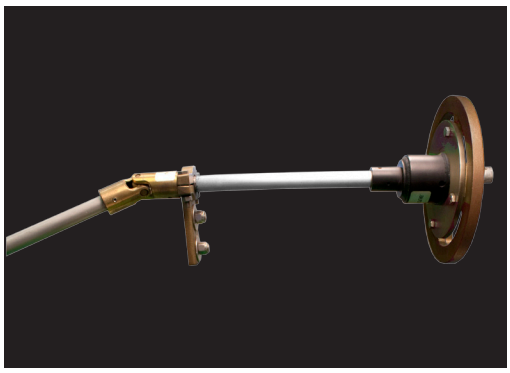
Elliott Manufacturing produces remote valve operating components for both flexible shaft and rigid rod systems. Our remote valve operating systems serve many important functions. They are used to:

- Place valve operating stations in convenient positions so that many valves can be accessible from one point.
- Make valves safer to operate by eliminating high platforms and other dangerous operating environments.
- Place the operating station away from hazardous environments or situations where operating personnel would normally want to limit exposure.



Flexible Shaft Systems

Flexible shaft systems are used when there is a large number of obstacles between the operating position and the valve to be operated. They can be easily routed around these obstacles making installation clean, efficient and simple. It features high-tensile, stainless and carbon steel, flexible shaft which is operated by a direct drive or geared system. The geared system can be configured using a range of gear ratios allowing smooth operation in even the longest and most complex installations. The direct drive system accommodates a wide range torque requirements through the use of varying shaft diameters. A flexible shaft is designed for rotary power transmission and ideally suited to remote and safe actuation of valves.



Rigid Rod Systems

Rigid rod systems are ideal where remote valve operating system paths are straight or nearly straight. The rigid rod can accommodate sharp bends easily with the use of gear boxes or swivel gear joints. In addition to the rigid components, Elliott manufactures numerous adaptors and other fittings so that combination flexible shaft and rigid rod systems can be used together to handle particularly difficult design problems. The quality of our rigid rod systems is equal to that of the flexible shaft components and conform to Naval Sea Systems Command Specifications.

Nuclear/Power Generation Remote Operating Gear

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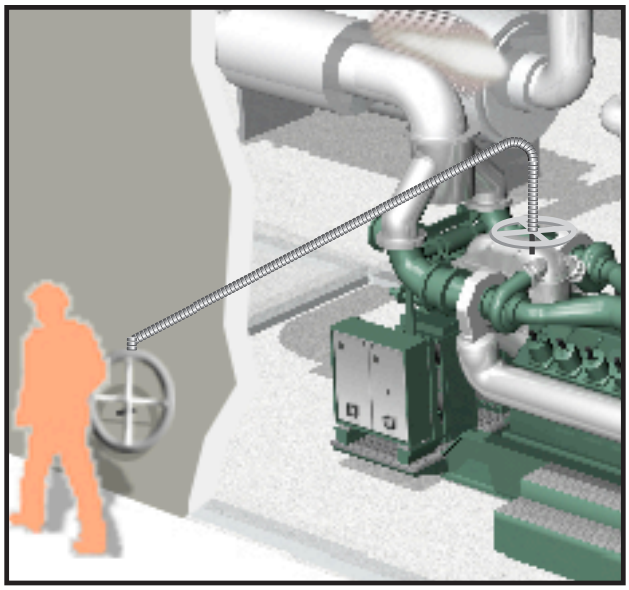

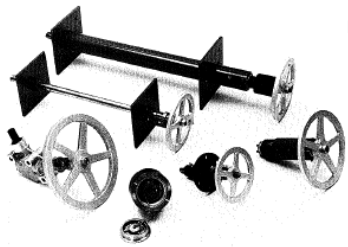

Penetrations/Operating Stations

1 — Shielded Penetration Wall or Floor Housing Assembly with Indicator, Clutch and Handwheel (grout-in-place type). 2 — Nonshielded Torque Transmission Spindle with Indicator and Handwheel. 3 — 900 Gear Box with Handwheel.

4 — Deck Box Operating Station. 5 — Nonshielded Wall Terminal (with Indicator) Operating Station. 6 — Indicator with Handwheel Operating Station.

Sample List of Installations in Active Nuclear Power Plants

Plant	Location	Plant	Location	Plant	Location
Joseph M. Farley Unit 1	Dothan, AL	Indian Point 2	Indian Point, NY	Korea 7	Young Kwang-Kun, Korea
Joseph M. Farley Unit 2	Dothan, AL	Indian Point 3	Indian Point, NY	Korea 8	Young Kwang-Kun, Korea
North Anna Unit 1	Mineral, VA	St. Lucie Unit 1	Jensen Beach, FL	Limerick I	Pottstown, PA
North Anna Unit 2	Mineral, VA	St. Lucie Unit 2	Jensen Beach, FL	Limerick II	Pottstown, PA
James A. Fitzpatrick	Scriba, NY	Enrico Fermi Unit 2	Newport, MI	Kuosheng Unit 1	Taipei, Taiwan
Salem Unit 1	Salem, NJ	Millstone Unit 2	Waterford, CT	Kuosheng Unit 2	Taipei, Taiwan
Salem Unit 2	Salem, NJ	Millstone Unit 3	Waterford, CT	Grand Gulf Nuclear Station	Port Gibson, MS
Three Mile Island I	Goldsboro, PA	Donald C. Cook Unit 1	Bridgeman, MI	Alvin W. Vogtle 1	Waynesboro, GA
Peach Bottom 2	Delta, PA	Donald C. Cook Unit 2	Bridgeman, MI	Alvin W. Vogtle 2	Waynesboro, GA
Peach Bottom 3	Delta, PA	Watts Bar Unit 1	Spring City, TN	South Texas Project 1	Palacios, TX
Edwin I Hatch Unit 1	Baxley, GA	Watts Bar Unit 2	Spring City, TN	South Texas Project 2	Palacios, TX
Edwin I Hatch Unit 2	Baxley, GA	Kewaunee 1	Calton, WI	Nine Mile Point 1	Scriba, NY
Prairie Island 1	Redwing, MN	Vermont Yankee	Vernon, VT	Nine Mile Point 2	Scriba, NY
Prairie Island 2	Redwing, MN	McGuire Nuclear Station 1	Cowans, NC	LaSalle County 1	Seneca, IL
Beaver Valley 1	Shippingport, PA	McGuire Nuclear Station 2	Cowans, NC	LaSalle County 2	Seneca, IL
Beaver Valley 2	Shippingport, PA	Seabrook Station 1	Seabrook, NH	Surry 1	Gravel Neck, VA
Sequoyah 1	Daisy, TN	Seabrook Station 2	Seabrook, NH	Surry 2	Gravel Neck, VA
Sequoyah 2	Daisy, TN	Catawba Nuclear Station 1	Newport, SC	Shearon Harris 1	Newhill, NC
Dresden Unit 2	Morris, IL	Catawba Nuclear Station 2	Newport, SC	Turkey Point 3	Florida City, FL
Dresden Unit 3	Morris, IL	Korea 5 & 6	Ko-Ri, Korea	Turkey Point 4	Florida City, FL

Products

Our system components are designed specifically for the power generation industry. The variety of sizes and types available in both flexible shaft (we invented flexible shafting) and rigid rod configurations will solve any conceivable remote valve operation problem. The speed and ease of installation will reduce installation costs. Our products are 10CFR 50 Appendix B compliant and recognized as the industry standard for quality, yet our pricing is highly competitive.

Experience

Elliott (Stow) has equipment in nearly every U.S. nuclear installation operating today; in many fossil plants too. Our products have also been installed in plants abroad. A complete list of all plants containing our equipment is available from Elliott's Sales and Marketing Department

Maintenance

Our components offer the lowest maintenance factor in the industry. Most items require no service whatsoever. Others need only minimal service, usually done during normally scheduled plant shutdowns.

Penetrating the Shield Wall or Floor Elliott manufactures several types of shield wall and floor penetrations that are installed by utilizing either the cast-in-place or grout-in-place construction methods.

Operating Stations for Shielded Penetrations

Hand wheels mounted on indicators or directly attached to plain male drives make up the basic operation stations. The additions of a Torque-Limiting Clutch to an operating station permits the controlled operation of small plug, ball, diaphragm or instrumentation valves without the attendant concern for over-torquing valve stems or seats

Marine Remote Operating Gear

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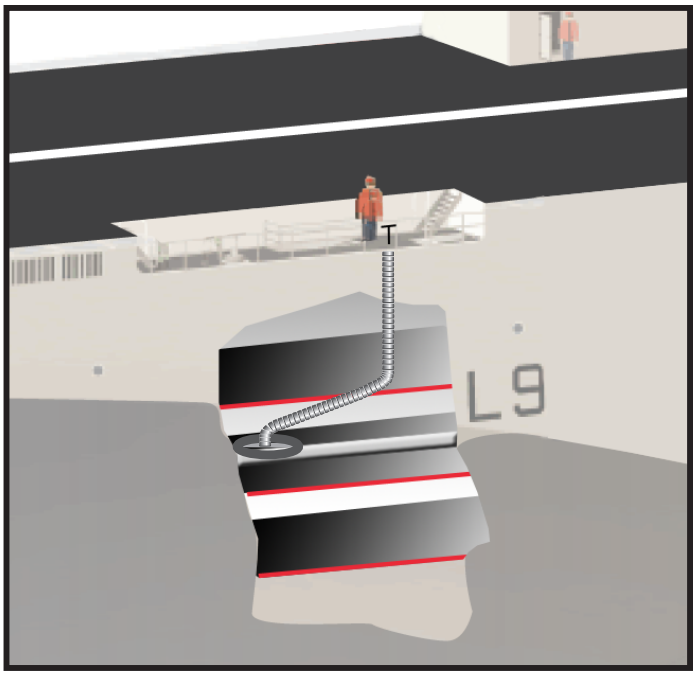
Products
Our remote manual valve operators are designed with the marine industry in mind. Where applicable components are in complete conformance with Naval Sea Systems Command specifications for this type of equipment. We manufacture using high grade bronze and stainless steel materials.



Experience
Extensively installed in Naval and commercial shipping. We have solved remote mechanical valve control problems for a many years and have a wealth of application experience.

Maintenance
Our products are designed for long life. High quality bearings are used on all moving parts; gearboxes are sealed for life; specially designed lubricants are used in the flexible shafting and the use of superior materials delivers the most maintenance free product available today.

Technical excellence
All components are shock & vibration tested to MIL-901C Class 1 and MIL-STD-167-1 Type 1 Uniflex-Stow flexible shaft systems have been successfully fire tested to 1300°F (700°C), also API 607. Immersion, pressure and salt fog tests exceeding MIL-STD-810E requirements.

Cost effective
If you consider the component costs, installation costs and preventative maintenance costs then Uniflex-Stow offers unparalleled benefits.

Typical valve applications
Ballast valves, bilge valves, sea water discharge valves, fuel transfer valves, fire mains valves, sea water service valves and many more.

Industrial Remote Operating Gear

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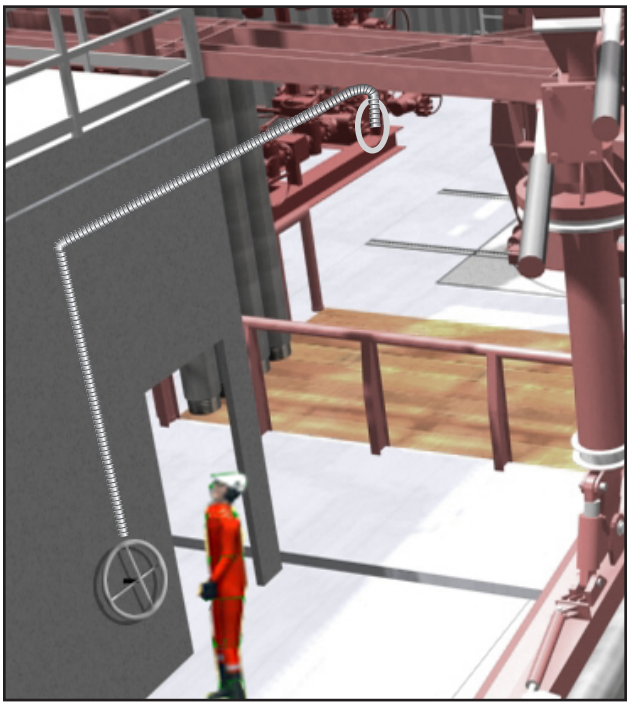
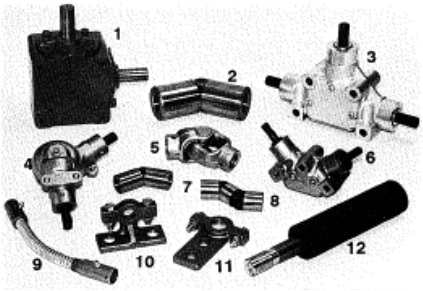


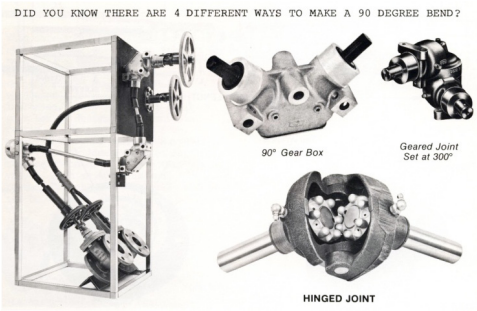


Transmission Components

1 — 90 Square Gear Box. 2 — Universal Joint Type B. 3. — Three-Spindle Gear Box. 4 — 300 Swivel Geared Joint. 5 — Universal Joint Type A. 5 — 90 Gear Box. 7 — Universal Joint Type B. 8 — Double Universal Joint Type B. 9 — Flexible Shaft. 10 — Type SHPO Rod Hanger. 11 — Type SHS Rod Hanger. 12 — Spined Slip Joint.

Valve Couplings

1 — Type VD2 Valve Couplings (for rising stem valves) with quick disconnect. 2 — Diaphragm Valve Coupling (for rising stem valves). 3 — Type NVF3 Valve Coupling (for rising valves). 5 — Type NVM2 Valve Coupling (for rising stem valves).



Elliott's Uniflex geared system is the most versatile, reliable and proven approach to remote mechanical valve actuation available today. It features a 5/8"(16mm) diameter, high-tensile, stainless steel, flexible shaft which is standard in the geared system. The flexible shaft is driven by a geared operator which transmits power to a reduction gear box at the valve. The system can be configured using a range of gear ratios allowing smooth operation in even the longest and most complex installations. A flexible shaft is designed for rotary power transmission and ideally suited to remote and safe actuation of valves.

Products

Elliott Manufacturing stands ready to meet all of your remote valve control requirements. Choose from over 750 valve operating components in stock, or put our custom design capabilities to work for you. All Elliott products are built and tested to the most stringent quality standards. Our quality control department routinely works to MIL specifications and each and every procedure is monitored to assure consistent quality.

Experience

Elliott Manufacturing is the world's oldest supplier of remote valve control systems with 100 years offering global customers world class performance. Keeping our methods, manpower and machinery up to date allows Elliott to handle requirements with confidence and efficiency. Quality, consistency, and on-time delivery are standard procedure.

Maintenance

Elliott Manufacturing designs long life into all of our remote valve operating components. High quality bearings are used on all moving parts, gear boxes are sealed for life, specially designed lubricants are used in the flexible shafting and the use of superior materials throughout all combine to bring you the most maintenance free product available today.

Gear Driven Flex Shaft Technology

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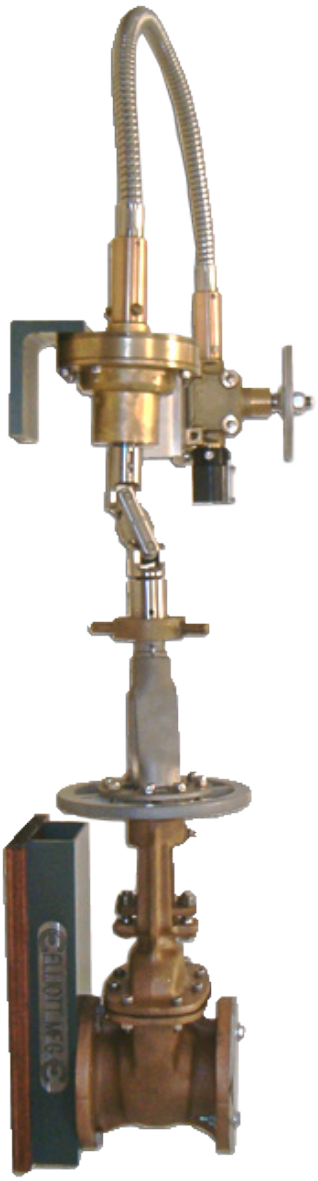
Major Design Parameters

Maximum operating torque at valve	200 ft-lbs (271 Nm)
Maximum system length	150 ft (46 M)
Minimum system length	3 ft (1 M)
Minimum bend radius	12 inches (304mm)
Operating environment	-65°F to +800°F -54°C to +427°C

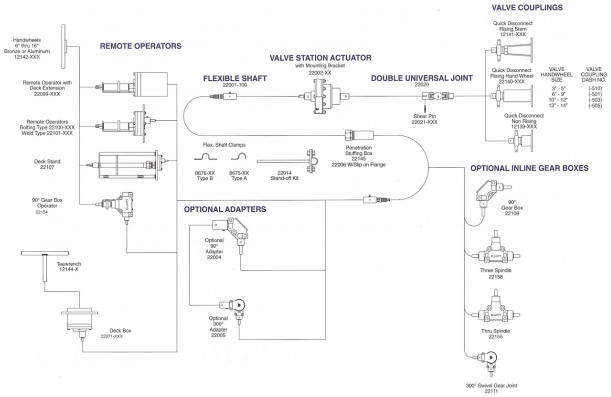


Quick Reference System Ratio Selection Guide

This guide is based on an average system containing approximately 270° of accumulated bends and utilizing a 10" (25.4cm) Tee wrench. Each system selected will deliver the maximum anticipated valve torque with an input torque of around 25 ft lbs (34Nm) at the remote operator.

Valve Hand Wheel		Valve Torque		System Length/Ratio				
Inches	cm	Ft-lbs	Nm	10ft (3M)	20ft (6M)	40ft (12M)	60ft (18M)	80 ft (24M)
2	5.1	9.4	12.7	1:1	1:1	1:1	1:1	1:1
3	7.6	15.4	20.8	1:1	2:1	2:1	2:1	4:1
4	10.2	22.1	30.0	2:1	2:1	4:1	4:1	4:1
5	12.7	29.1	39.5	2:1	4:1	4:1	4:1	6:1
6	15.2	36.9	50.0	4:1	4:1	4:1	6:1	9:1
7	17.8	44.1	59.8	4:1	4:1	6:1	6:1	9:1
8	20.3	51.6	70.0	4:1	6:1	6:1	9:1	15:1
9	22.9	59.5	80.7	4:1	6:1	6:1	9:1	15:1
10	25.4	67.8	91.9	6:1	6:1	9:1	9:1	15:1
11	27.9	76.3	103.4	6:1	9:1	9:1	15:1	15:1
12	30.5	84.4	114.4	6:1	9:1	9:1	15:1	15:1
14	35.6	100.6	136.4	9:1	9:1	15:1	15:1	15:1
16	40.6	117.5	159.3	9:1	9:1	15:1	15:1	15:1
18	45.7	135.0	183.0	9:1	15:1	15:1	15:1	-
21	53.3	160.8	217.9	15:1	15:1	15:1	-	-

Uniflex
Remote Mechanical Valve Actuator
Component Selection Guide



Direct Drive Flex Shaft Technology

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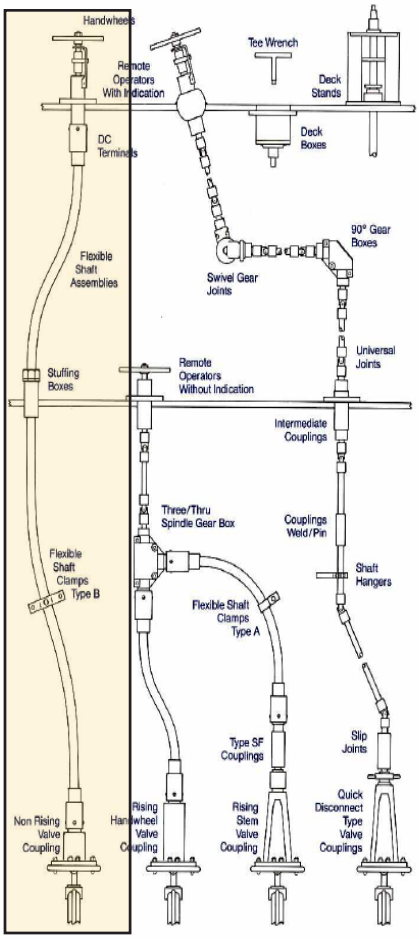

Typical Example
Given:
hand wheel diameter 5”
Total shaft(s) length 25’

Then: find 5” hand wheel diameter column, read across to core and hand wheel columns shown under 25’ system length column.

Result:
Flex shaft core diameter = 0.75”
Hand wheel diameter = 7”

Note: In Table 2
d = Shaft Core Diameter
D = Hand wheel Diameter

Selection of Flexible Shaft Size

After the accurate flexible shaft length has been determined, refer to Tables 1 and 2 to select the appropriate flexible shaft size. Table 1 presents the mechanical properties upon which the values in Table 2 are determined.

The shaft sizes presented in Table 2 are based on ordinary one-man effort to operate valves from a remote station. Transmission loss has been compensated for by hand wheel diameter increase.

For flexible shaft applications other than remote valve operation, the torque ratings presented in Table 2 are appropriate. Maximum total deflection can be calculated by multiplying the total length in feet of the system by the Torsional Deflection shown in Table 1.

Table 1 Flexible Shaft Mechanical Properties

Shaft Core Dia. (in) | (mm)	0.5	12.7	0.75	19.05	1	25.4	1.25	31.75	1.625	41.275
Max. Torque Input (ft*lb) | (NM)	20	27.116359	40	54.232718	80	108.465436	160	216.930872	250	338.9544875
Minimum Operating Radius (in.) | (cm)	12	30.48	15	38.1	18	45.72	21	53.34	24	60.96
Torsional Deflection (degrees per ft. (m) at maximum Torque)	15	49.21259843	10	32.80839895	7	22.96587927	5	16.40419948	4	13.12335958
Weight lb/ft | kg/m	1.25	2.74	2	3.49	3.25	4.74	5.25	6.74	7.25	8.74

Table 2 Flexible Shaft Core Diameter Selection Guide

Valve Handwheel Diameter		Valve Operating Torque		5 ft		1.524 m		10 ft		3.048 m		15 ft		4.572 m		20 ft		6.096 m	
				d	D	d	D	d	D	d	D	d	D	d	D	d	D	d	D
(in.)	(mm)	(ft*lb)	(NM)	(in.)	(in.)	(mm)	(cm)	(in.)	(in.)	(mm)	(cm)	(in.)	(in.)	(mm)	(cm)	(in.)	(in.)	(mm)	(cm)
3	76.2	10	11.35581795	0.5	5	127	7.54	0.5	5	127	7.54	0.5	5	127	7.54	0.5	5	127	7.54
4	101.6	13	14.35581795	0.5	5	127	7.54	0.5	5	127	7.54	0.5	5	127	7.54	0.5	5	127	7.54
5	127	17	18.35581795	0.5	5	127	7.54	0.5	5	127	7.54	0.75	7	177.8	9.54	0.75	7	177.8	9.54
6	152.4	20	21.35581795	0.75	7	177.8	9.54	0.75	7	177.8	9.54	0.75	7	177.8	9.54	0.75	7	177.8	9.54
7	177.8	26	27.35581795	0.75	8	203.2	10.54	0.75	8	203.2	10.54	0.75	8	203.2	10.54	0.75	8	203.2	10.54
8	203.2	30	31.35581795	0.75	8	203.2	10.54	0.75	8	203.2	10.54	1	9	228.6	11.54	1	10	254	12.54
9	228.6	34	35.35581795	0.75	8	203.2	10.54	1	10	254	12.54	1	10	254	12.54	1	10	254	12.54
10	254	40	41.35581795	1	10	254	12.54	1	10	254	12.54	1	12	304.8	14.54	1	12	304.8	14.54
11	279.4	46	47.35581795	1	12	304.8	14.54	1	12	304.8	14.54	1	12	304.8	14.54	1	12	304.8	14.54
12	304.8	52	53.35581795	1	12	304.8	14.54	1	12	304.8	14.54	1	12	304.8	14.54	1	12	304.8	14.54
14	355.6	70	71.35581795	1.25	16	406.4	18.54	1.25	16	406.4	18.54	1.25	16	406.4	18.54	1.25	18	457.2	20.54
16	406.4	80	81.35581795	1.25	18	457.2	20.54	1.25	18	457.2	20.54	1.25	18	457.2	20.54	1.25	18	457.2	20.54
18	457.2	90	91.35581795	1.25	18	457.2	20.54	1.25	18	457.2	20.54	1.25	18	457.2	20.54	1.25	21	533.4	23.54
21	533.4	122	123.355818	1.25	21	533.4	23.54	1.25	21	533.4	23.54	1.25	21	533.4	23.54	1.25	21	533.4	23.54
24	609.6	140	141.355818	1.625	27	685.8	29.54	1.625	27	685.8	29.54	1.625	27	685.8	29.54	1.625	27	685.8	29.54
27	685.8	158	159.355818	1.625	27	685.8	29.54	1.625	27	685.8	29.54	1.625	27	685.8	29.54	1.625	27	685.8	29.54
Valve Handwheel Diameter		Valve Operating Torque		25 ft		7.62 m		30 ft		9.144 m		40 ft		12.192 m		50 ft		15.24 m	
				d	D	d	D	d	D	d	D	d	D	d	D	d	D	d	D
(in.)	(mm)	(ft*lb)	(NM)	(in.)	(in.)	(mm)	(cm)	(in.)	(in.)	(mm)	(cm)	(in.)	(in.)	(mm)	(cm)	(in.)	(in.)	(mm)	(cm)
3	76.2	10	11.35581795	0.5	5	127	7.54	0.75	7	177.8	9.54	0.75	7	177.8	9.54	0.75	7	177.8	9.54
4	101.6	13	14.35581795	0.75	7	177.8	9.54	0.75	7	177.8	9.54	0.75	7	177.8	9.54	0.75	7	177.8	9.54
5	127	17	18.35581795	0.75	7	177.8	9.54	0.75	7	177.8	9.54	0.75	8	203.2	10.54	0.75	8	203.2	10.54
6	152.4	20	21.35581795	0.75	8	203.2	10.54	0.75	8	203.2	10.54	1	9	228.6	11.54	1	10	254	12.54
7	177.8	26	27.35581795	0.75	8	203.2	10.54	1	10	254	12.54	1	10	254	12.54	1	12	304.8	14.54
8	203.2	30	31.35581795	1	10	254	12.54	1	10	254	12.54	1	12	304.8	14.54	1	12	304.8	14.54
9	228.6	34	35.35581795	1	10	254	12.54	1	12	304.8	14.54	1	12	304.8	14.54	1	12	304.8	14.54
10	254	40	41.35581795	1	12	304.8	14.54	1	12	304.8	14.54	1	12	304.8	14.54	1.25	14	355.6	16.54
11	279.4	46	47.35581795	1	12	304.8	14.54	1	12	304.8	14.54	1.25	14	355.6	16.54	1.25	16	406.4	18.54
12	304.8	52	53.35581795	1	12	304.8	14.54	1.25	14	355.6	16.54	1.25	16	406.4	18.54	1.25	18	457.2	20.54
14	355.6	70	71.35581795	1.25	18	457.2	20.54	1.25	18	457.2	20.54	1.25	21	533.4	23.54	1.625	24	609.6	26.54
16	406.4	80	81.35581795	1.25	18	457.2	20.54	1.25	21	533.4	23.54	1.625	24	609.6	26.54	1.625	27	685.8	29.54
18	457.2	90	91.35581795	1.25	21	533.4	23.54	1.625	21	533.4	23.54	1.625	24	609.6	26.54	1.625	27	685.8	29.54
21	533.4	122	123.355818	1.625	27	685.8	29.54	1.625	27	685.8	29.54	1.625	27	685.8	29.54	1.625	27	685.8	29.54
24	609.6	140	141.355818	1.625	27	685.8	29.54	1.625	27	685.8	29.54								
27	685.8	158	159.355818	1.625	27	685.8	29.54												

Rigid Rod Technology

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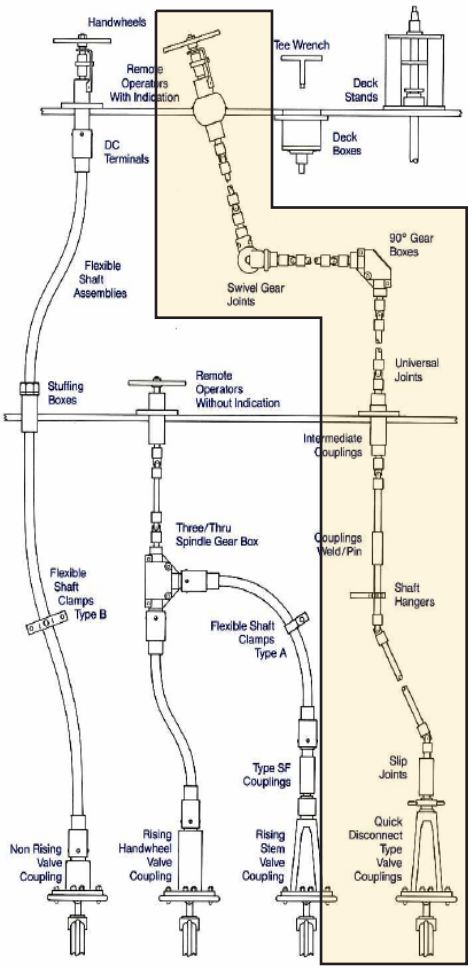
Selection of Rigid Rod Components

A remote valve operator system can be designed using rigid rod components where operating speed is slow or intermittent and rotates in either direction. The selection guide can be used to apply design factors to determine the specifications of suitable rigid rod components in a remote valve operator system. Use the following steps to determine the correct rigid rod diameter and remote operator hand wheel diameter.

1. Select the design factor (A,B,C or D) that most closely approximates the system under consideration.
2. Determine the valve hand wheel diameter or valve operating torque for the valve that is to be remotely operated.
3. Reading down the appropriate design factor column and over from the valve hand wheel/operating torque determined in two (2) above, locate the point of intersection under Column "A"

Note: The hand wheel diameter at the remote operator has been increased to compensate for the transmission system losses.



Rigid Rod Mechanical Properties

Nominal Rod Dia.		Polar Moment of		Torsional Deflection*		Rigid Rod Weight	
Diameter		of Inertia					
inch	cm	Lp(in4)	Lp(cm4)	(deg/ft/ft*lb)	(deg/m/NM)	(lb/ft)	(kg/m)
0.5	1.27	0.00614	0.25540	0.1124	0.04645	0.668	0.99409
0.75	1.905	0.03106	1.29290	0.0222	0.00917	1.5	2.23225
1	2.54	0.09817	4.08631	0.007	0.00289	2.67	3.97340
1 1/4	3.175	0.23968	9.97623	0.0029	0.00120	4.17	6.20564

*Torsion deflection calculation considers G = Shear Modulus = 12(106) Psi

Suggested Rigid Rod Selection Guide

Valve Handwheel Diameter		Valve Operating Torque		A				B				C				D			
				Rod Dia.		h.wheel Dia.		Rod Dia.		h.wheel Dia.		Rod Dia.		h.wheel Dia.		Rod Dia.		h.wheel Dia	
(in.)	(cm)	(ft*lb)	(NM)	(in.)	(mm)	(in.)	(cm)	(in.)	(mm)	(in.)	(cm)	(in.)	(mm)	(in.)	(cm)	(in.)	(mm)	(in.)	(cm)
3	7.62	10	13.56	0.5	12.7	4	10.16	0.5	12.7	4	10.16	0.5	12.7	5	12.7	0.5	12.7	6	15.24
4	10.16	13	17.63	0.5	12.7	4	10.16	0.5	12.7	5	12.7	0.5	12.7	6	15.24	0.5	12.7	7	17.78
5	12.7	17	23.05	0.5	12.7	6	15.24	0.5	12.7	6	15.24	0.5	12.7	7	17.78	0.5	12.7	9	22.86
6	15.24	20	27.12	0.5	12.7	6	15.24	0.5	12.7	7	17.78	0.5	12.7	9	22.86	0.75	19.05	11	27.94
7	17.78	26	35.25	0.5	12.7	8	20.32	0.5	12.7	9	22.86	0.75	19.05	11	27.94	0.75	19.05	12	30.48
8	20.32	30	40.67	0.5	12.7	9	22.86	0.75	19.05	10	25.4	0.75	19.05	11	27.94	0.75	19.05	12	30.48
9	22.86	34	46.10	0.75	19.05	10	25.4	0.75	19.05	11	27.94	0.75	19.05	12	30.48	0.75	19.05	14	35.56
10	25.4	40	54.23	0.75	19.05	11	27.94	0.75	19.05	12	30.48	0.75	19.05	14	35.56	0.75	19.05	14	35.56
11	27.94	46	62.37	0.75	19.05	12	30.48	0.75	19.05	12	30.48	0.75	19.05	14	35.56	0.75	19.05	16	40.64
12	30.48	52	70.50	0.75	19.05	14	35.56	0.75	19.05	14	35.56	0.75	19.05	16	40.64	1	25.4	18	45.72
14	35.56	70	94.91	1	25.4	16	40.64	1	25.4	18	45.72	1	25.4	21	53.34	1	25.4	21	53.34
16	40.64	80	108.47	1	25.4	18	45.72	1	25.4	18	45.72	1	25.4	21	53.34	1	25.4	24	60.96
18	45.72	90	122.02	1	25.4	21	53.34	1	25.4	21	53.34	1	25.4	24	60.96	1	25.4	24	60.96
21	53.34	122	165.41	1	25.4	24	60.96	1	25.4	24	60.96	1	25.4	27	68.58	1.25	31.75	27	68.58
24	60.96	140	189.81	1.25	31.75	24	60.96	1.25	31.75	27	68.58	1.25	31.75	27	68.58	1.25	31.75	30	76.2
27	68.58	158	214.22	1.25	31.75	27	68.58	1.25	31.75	30	76.2	1.25	31.75	30	76.2	1.25	31.75	36	91.44
30	76.2	175	237.27	1.25	31.75	30	76.2	1.25	31.75	30	76.2	1.25	31.75	36	91.44	1.25	31.75	36	91.44
36	91.44	210	284.72	1.25	31.75	36	91.44												

A. (1) Remote Operating Station (2) Universal Joints B. (1) Remote Operating Station (4) Universal Joints (1) Gear Box C. (1) Remote Operating Station (8) Universal Joints (2) Gear Boxes D. (1) Remote Operating Station (3) Universal Joints (3) Gear Boxes (1) Intermediate Connection

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