SELECTION OF MARINE PROPULSION CONTROLS

J. Kobelt Manufacturing Company Ltd. manufactures components for 3 basic types of control systems:

Push-Pull
Wire Over Pulley
Pneumatic

Each system will provide excellent control if properly selected and installed. In some instances a combination of mechanical and pneumatic control components is utilized for a more economical control package.

Kobelt controls are made of die cast silicon brass and stainless steel hardware, for corrosion resistance and long life.

PUSH-PULL CONTROLS

This system is the most economical mechanical control and features:

— Easy installation
— Ideal for one or two stations (up to 3 stations on parallel installation only)
— Cable runs of up to 40 ft. (maximum 60 ft. using special cable with total cable bends not in excess of 360°

WIRE OVER PULLEY CONTROLS

The wire over pulley system is the best mechanical remote control and features:

— Accommodation for up to 6 control stations
— Cable runs up to 100 ft.
— Positive response (Kobelt patented cable connections)
— Eliminates backlash
— Years of trouble free service

MECHANICAL CONTROLS GENERAL

A simple throttle delay system (85 Servo Cylinder with Model 1525 Valve) is available with mechanical control systems. The Model 4600 Servo Cylinder can also be used in mechanical control systems to act as a power booster if hydraulic pressure is available.

PNEUMATIC CONTROLS

This system utilizes compressed air through copper tubing to transmit control signals. It is best suited for vessels 50 to 600 ft. requiring complex propulsion control functions, and features:

— Unlimited number of remote control stations
— Capacity of automating and synchronizing the propulsion package
— High degree of dependability
— Repetitive accuracy
— Minimum of maintenance
— Effortless control
— Mounting convenience of control components

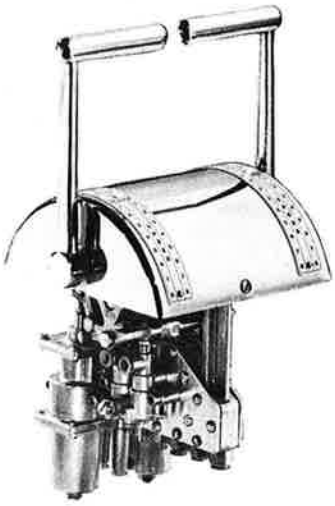
Pneumatic controls are recommended for control systems requiring shaft brake timing, throttle boost circuits or any interlocking functions.

KOBELT MANUFACTURING COMPANY LIMITED

TYPE OF CONTROLS

PUSH PULL

WIRE-OVER-PULLEY



PNEUMATIC

Control Components	Inexpensive Reliable	Inexpensive Very Reliable	Good Value. Very Reliable. Automatic Durable.
Energy Source	Manual	Manual	Compressed air
Energy Storage	None	None	Accumulator Tank
Command Transmission	Enclosed cable	Open-Wire over Pulley	Copper Tube
Transmission Time	Instant	Instant	Infinitely variable
Maximum Transmission Distance	40 ft.	100 ft.	600 ft.
Maximum number command stations	2 - 3	Up to 6	Unlimited
Control Output Force	Very limited	Limited	Unlimited
Installation	Quick & Easy Cables pose obstructions.	Requires more planning & time, cables pose obstructions.	Mounting Convenience. Presents no obstruction. Installation time reasonable.
Maintenance	Generally simple Lubrication of control head shaft.	Generally simple Lubrication of control head shaft.	Generally simple depending on system. Synthetic rubber parts requires replacement approx. every 8 years.
Applications	Light duty Simple	Medium duty Reasonably simple	All duty Any system

CONTROLS BEST SUITED FOR TYPE OF BOAT

Small Pleasure Craft	X		
Medium Pleasure Craft	X	X	X
Large Pleasure Craft		X	X
Small Work Boat	X	X	X
Medium Work Boat		X	X
Large Work Boat			X
Small Fish Boat	X	X	
Medium Fish Boat		X	X
Large Fish Boat			X
Ocean Going Vessels			X

SMALL BOAT — Up to 50 ft.
MEDIUM BOAT — 50 -100 ft.

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