



All Kobelt equipment comes with a 5-year warranty that is the best in the industry. Strict quality control manufacturing and sturdy corrosion-resistant materials ensure trouble-free service above and beyond this generous warranty period.

KOBELT

PUSH-PULL CONTROLS
 HYDRAULIC STEERING & ACCESSORIES
 ELECTRONIC CONTROLS
 PNEUMATIC CONTROLS
 DISC BRAKES

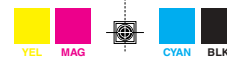
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 sales@kobelt.com www.kobelt.com

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5M 09/00

PRINTED IN CANADA



Kobelt Manufacturing
 Hydraulic Steering & Accessories Catalogue
 17" x 11" Trim - 17-1/4" x 11-1/4" Bleed - Folds to 8-1/2" x 11"
 4/C + Gloss Varnish

CONTROL YOUR SHIP WITH COMPLETE SYSTEMS AND COMPONENTS FROM KOBELT MANUFACTURING

- 1 Steering components up to 320 tonmeter for hydraulic steering of single and multi-rudder vessels
- 2 In the aftdeck control station, complete control over all propulsion and deck machinery.
- 3 Hydraulic cylinders and control devices for lowering and raising masts, davits for lifeboats, loading ramps etc.
- 4 Weatherproof controls for outside stations to control propulsion and deck machinery.
- 5 Control components for propulsion and deck machinery, plus electronic alarm systems and electronic telegraphs.
- 6 Control for all deck machinery such as anchor and towing winches.
- 7 Controls for bow thrusters.
- 8 Control components for any propulsion package, fixed pitch CP propellers, load share and load control.
- 9 Propeller shaft disk brakes, from small engines up to 50,000 HP.
- 10 Control components to control stern thrusters.



Kobelt Manufacturing, Surrey, British Columbia, Canada



Ever since our humble beginnings in 1962, Kobelt Manufacturing Limited has been committed to manufacturing the finest marine controls in the world. We stress the importance of quality, precision, competitive pricing and prompt delivery. Our team of dedicated production staff is uncompromising in ensuring that we meet the needs of all our valued customers. Our growing reputation in world markets is proof of our commitment to highest possible standards. From our very first line of pneumatic controls we've believed in the simple things—rugged construction, quality materials and prompt delivery to our customers. Today, the technology has changed, but our commitment remains the same. From our innovations in electronic controls to our craftsmanship with bronze and stainless steel, our products span the oceans of the world to further our reputation as an international leader in maritime technology.



KOBELT CONTROLS

WHY ARE KOBELT CONTROLS THE BEST?

All components are made from die cast brass with stainless steel hardware.

1. Solid brass frame for watertight installation.
2. Stainless steel shaft supported in two bearings.
3. Large pins and bearings for long life.
4. Roller type detent.
5. Adjustable nylon throttle friction.
6. Neutral safety switch.
7. In-line push or pull on cable end.
8. Removable solid brass dome.
9. Reverse motion hook-up for clutch and throttle.
10. Several connection points for cable to suit engine and gear.
11. Over-riding throttle (pull out).

Mounting screws under the dome.

Easy installation and maintenance.

Throttle movement proportional to handle travel.

All parts interchangeable.

Five year warranty with sales and service around the world.

Kobelt push-pull controls are manufactured under one or more of the following Patent Numbers, further patents pending.

Canadian Patent Numbers

1153673
1158136
1206842
1185878
1176139
1166097
1202292

U.S.

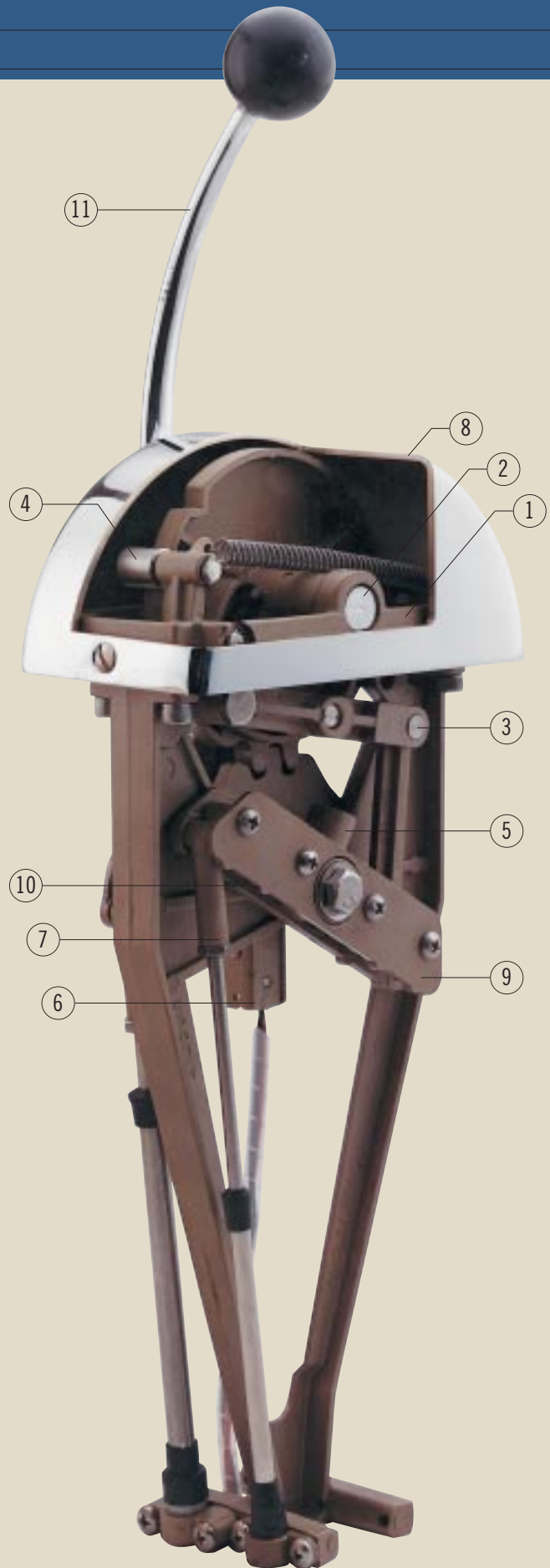
Patent Numbers
4280371
4326612
4453428
4512451
4470492
4478109
4592526
4730507

For more information contact:

Dealer

Brochures on many of our other products are available.

No other control can offer all the above and match the Kobelt Price.



KOBELT CONTROLS

STANDARD FEATURES

Our control heads are available in a polished brass finish, polished chrome and black epoxy. When ordering please state finish required. The controls are equipped with adjustable friction or detent. A choice of various handle lengths is available; when ordering please specify. Neutral safety switches are available for all models. Stroke limitation screws are also provided on one and two handle control heads. All domes are removable for easy installation and adjustment. Kobelt Manufacturing produces a vast number of different control components and it is, therefore, very easy for us to produce **custom-made** control heads, all simply assembled from standard components in various configurations.

When ordering control heads, specify model number and letter code designation.

Ordering Information:

Letter code designations

- A – One short handle with friction and one long handle with detent.
- AA – One short handle with friction and one long handle with friction.
- B – Two long handles with detent.
- C – Two long handles with friction.
- D – Two long handles with one detent and one friction.
- E – Two short handles with detent.
- F – Two short handles with friction.
- G – Two short handles with one detent and one friction.
- *H – With one neutral safety switch.
- *J – With two neutral safety switches.
- K – With chrome finish cover and handle.
- L – With polished brass finish cover and handle.
- M – With black epoxy finish cover and chrome handle.
- N – One long handle with detent.
- NN – One long handle with friction and detent.
- O – One long handle with friction.
- P – One short handle with detent.
- PP – One short handle with friction and detent.
- R – One short handle with friction.
- S – Right hand model.
- T – Left hand model.
- U – Curved handle.
- V – T-bar handle with coloured plastic grips.
- W – Removable sailboat handle.
- X – Neutral locking powerbook handle.
- Y – T-bar handle (standard).
- Z – With riveted metal labels.

When ordering Kobelt adapter kits for control heads, specify the control head number followed by -0901 for 30 series adapter kit and -0902 for 40 series adapter kit.

For neutral safety switch please specify control head number followed by -0903.

*Neutral safety switch is normally installed with detented handle.



PUSH-PULL CONTROLS

BASIC INFORMATION ON PUSH-PULL CONTROLS

The mechanical push-pull control is a very simple and easily installed system for smaller boats. The equipment controlled by a system of this type must be relatively easy to operate. Kobelt provides a variety of hydraulic-actuated power assist units for use on clutch and throttle applications requiring additional mechanical force (Part No. 4602, 4605).

We generally do not recommend the installation of more than two stations with push-pull cables. If the cable runs are relatively short and straight, it is possible to make a three-station system work. For a multi-station, single lever control system, a combination of wire-over-pulley and push-pull with our model 2051 master control works extremely well (for up to four stations).

The Kobelt single lever control heads 2042, 2043, 2044, 2046, 2047, 2048, 2050 and 2054 are designed to work as a one-station control only.

The 2080 series and the 2090 series are designed for 2 stations. These controls provide single lever control for clutch and throttle from two stations and are available in single and twin engine configuration. This system (Patent No. CDN. 1206642, 1158136; US 4512451, 4280371, Further Patent Pending) has proven to be a tremendous success since there is no other control system that even comes close for performance and durability.

Kobelt also produces complete systems for wire-over-pulley, electronic and pneumatic controls, as well as propeller shaft brakes and electrical control components. Since Kobelt has a total commitment to better design, most of our products are patented. Kobelt products, which already have an enviable reputation for durability and performance, are constantly being improved.

Our success is based on the simple fact that we are the only manufacturer in the world providing a non-corrosive product for the marine environment. Our well-engineered products and selection of only the best materials has put Kobelt into an exclusive class in terms of quality and performance, enabling us to offer our customers a five-year warranty.

Kobelt controls are sold through distributors worldwide. If you are not already a Kobelt user, please do yourself a favour and contact your nearest distributor.

GENERAL INFORMATION

Kobelt Manufacturing does not produce a push-pull cable. There are many push-pull cable manufacturers in the world working with the same dimensional specifications, therefore, the cables are all interchangeable. There is, however, a tremendous variation in the structural quality and design. We recommend the use of low friction cables with flexible cores, such as those manufactured by Felsted®.

TECHNICAL SPECIFICATIONS

The Kobelt control heads are designed to be used with either 30 or 40 series cable so please specify when ordering. Our heads and adapter kits are also designed to accept the clamp type cable ends. The minimum bending radius recommended by us is 8" (200mm), the maximum loading in push and pull mode on the 30 series cable should not exceed 50 lbs. (22kg) and the maximum load on a 40 series cable should not be greater than 100 lbs. (45kg).

INSTALLATION INSTRUCTIONS

A push-pull control system is dependent largely upon the quality of the cable and the layout of the installation. An excessive number of bends, especially small radius bends, will make a control system of this nature stiff and difficult to handle. It must be installed to eliminate as many bends as possible and also provide generous radii, especially on multi-station installations. On long and multi-station cable runs we can provide ball bearing cables to reduce the friction and lost motion from conventional cables. These cables are very expensive and Kobelt electronics or air controls, in many cases, will do the job just as efficiently for less. Kobelt only recommends the use of ball bearing cables when there is absolutely no way of installing compressed air, electronics or a wire-over-pulley system.

POWER ASSIST UNITS

Kobelt also provides a variety of hydraulic power assist cylinders to aid the push-pull cable in controlling clutches and throttles. For further details regarding servo cylinders and product numbers 4602, 4605 and 4607, please refer to page 24 or consult our factory or your nearest distributor.

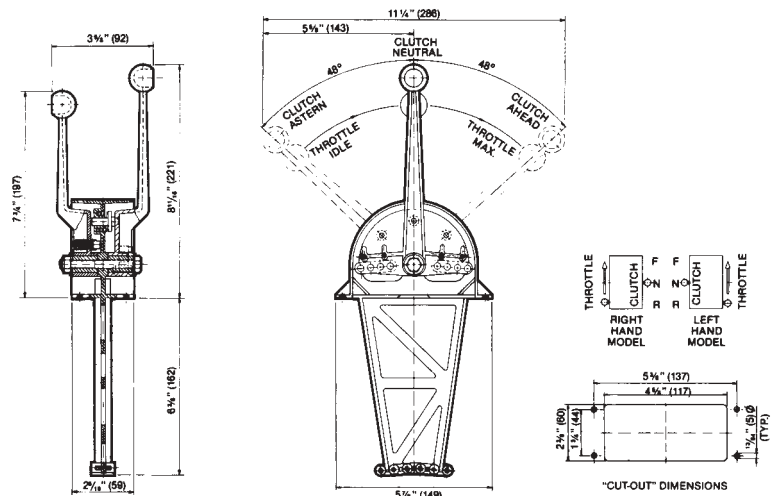
2002 TWIN HANDLE BRASS CONTROL HEAD 3" STROKE



Our Model 2002 is designed for small workboats and pleasure crafts for single or two station control of engine speed and gear box direction. Its rugged design, simplicity of construction and quality of material (brass, and stainless steel hardware) will give years of trouble-free service with a minimum investment. The throttle must be at idle before the gear control lever can be moved to any position. This feature will protect the gear box since the engine must be at idle for clutch shifting.

Letter code designations:

S, T



2003/2004/2006 ONE HANDLE HEAVY DUTY CONTROL HEADS

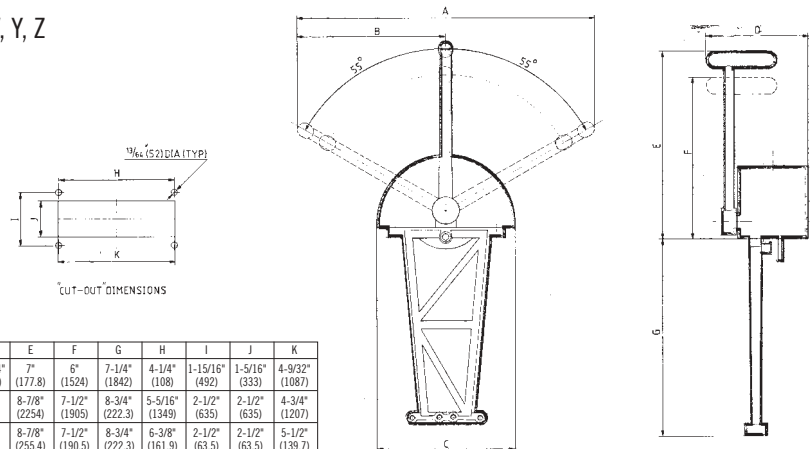


Designed and built with careful attention to quality of materials and workmanship, the rugged design incorporates practicality and contemporary styling. The all-brass and stainless steel construction of these control heads will give years of trouble free operation.

Model 2003 and 2004 provide 3" (76mm) of cable stroke and Model 2006 provides 4" (102mm) of cable stroke. All one-handle and two-handle Kobelt control heads are equipped with frictions or detents as standard. Neutral safety switches are an optional extra; see ordering table.

Letter code designations:

H, K, L, M, N, O, P, R, V, Y, Z



	A	B	C	D	E	F	G	H	I	J	K
MODEL 2003	11-1/16" (281)	5-17/32" (1405)	5-1/16" (1286)	5-13/64" (132.2)	7" (177.8)	6" (152.4)	7-1/4" (1842)	4-1/4" (108)	1-15/16" (492)	1-5/16" (333)	4-9/32" (1087)
MODEL 2004	13-1/2" (3429)	6-3/4" (1715)	6-1/15" (154)	4-1/4" (108)	8-7/8" (225.4)	7-1/2" (190.5)	8-3/4" (222.3)	5-5/16" (1349)	2-1/2" (63.5)	2-1/2" (63.5)	4-3/4" (1207)
MODEL 2006	13-1/2" (342.9)	6-3/4" (171.5)	7-1/8" (181)	4-1/4" (108)	8-7/8" (255.4)	7-1/2" (190.5)	8-3/4" (222.3)	6-3/8" (161.9)	2-1/2" (63.5)	2-1/2" (63.5)	5-1/2" (139.7)

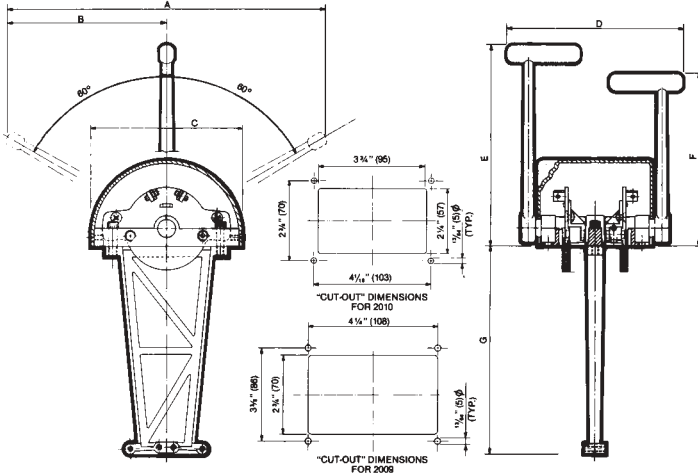
2009/2010 TWIN HANDLE CONTROL HEADS

These control heads are made in all brass and stainless steel for medium duty applications. Model 2009 with 3" (76mm) of stroke can be used for one or two station installations with relatively short and straight runs. Model 2010, because of the short stroke – 2-3/8" (60mm) – is only recommended for one station control.

Letter code designations:

A, AA, B, C, D, E, F, G, H, J, K, L, M, V, Y, Z

	A	B	C	D	E	F	G
MODEL 2009	11-1/16" (281)	5-17/32" (140)	5-1/4" (133)	6-1/8" (156)	7" (178)	6"	7-1/4" (184)
MODEL 2010	10-7/8" (276)	5-7/16" (138)	4-3/4" (121)	503/4" (146)	7" (178)	6"	7-5/16" (186)



A throttle and clutch interlock (similar to our Model 2002) is available for Model 2009. Please specify when ordering: S or T.



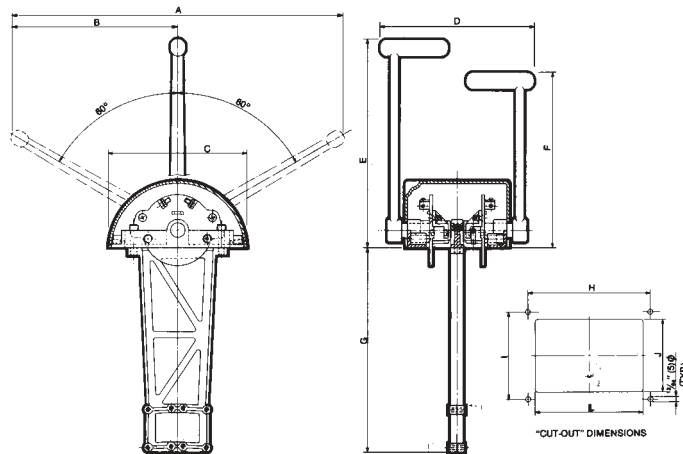
2011/2012 TWIN HANDLE HEAVY DUTY CONTROL HEADS

These controls are designed for one or two station applications to control reasonably heavy movable clutches and throttles (not mechanical clutches). The heavy duty construction of these units will provide years of trouble free service. Model 2011 has a maximum of 3" (76mm) of cable stroke and model 2012 has 4" (102mm). Several attachment points for the cable are provided, as well as handle travel limitation screws.

Letter code designations:

A, AA, B, C, D, E, F, G, H, J, K, L, M, V, Y, Z

	A	B	C	D	E	F	G	H
MODEL 2011	14-3/16" (360)	7-3/32" (180)	5-15/16" (151)	6-5/8" (168)	8-15/16" (227)	7-1/2" (190)	8-3/4" (222)	5-1/4" (133)
MODEL 2012	14-3/16" (360)	7-3/32" (180)	5-15/16" (151)	6-5/8" (168)	8-15/16" (227)	7-1/2" (190)	8-3/4" (222)	6-3/8" (162)



A throttle and clutch interlock (similar to our Model 2002) is available for Model 2011. Please specify when ordering: S or T.

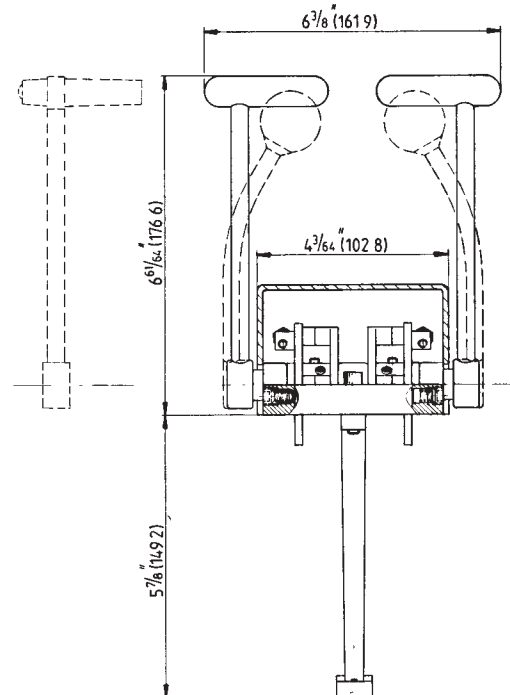
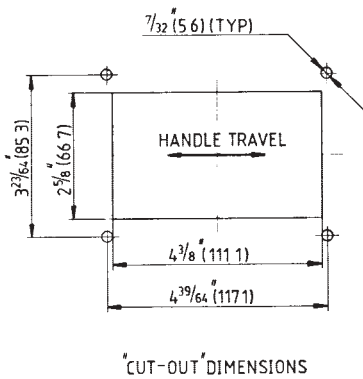
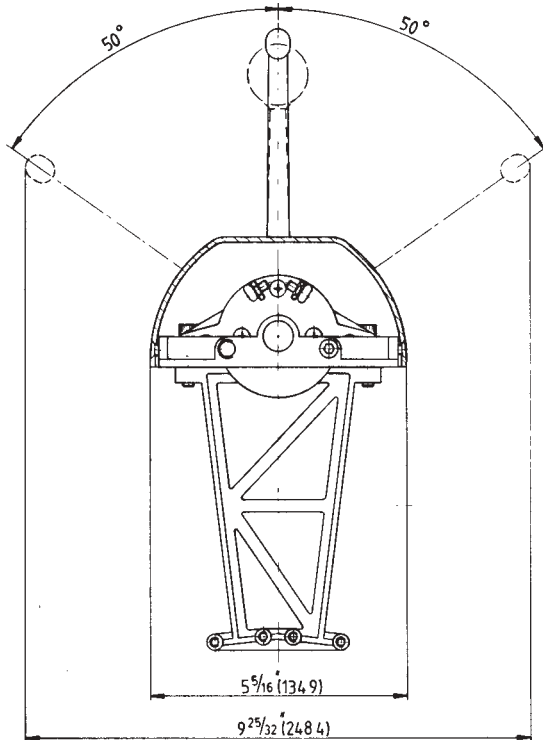


2015 TWO HANDLE PUSH-PULL CONTROL HEAD

This control incorporates all the features of the Kobelt standard Push Pull Control: 3" strokes, all bronze and stainless steel, and extremely heavy duty construction. The cable support bracket has been shortened to improve cable attachment access to the Control head.

Letter code designations:

A, AA, B, C, D, E, F, G, K, L, M, U, V



KOBELT ELECTRIC CONTROLS AND COMPONENTS

Over the past few years, Kobelt Manufacturing has foreseen the need for good, reliable components for electric remote controls. Most manufacturers adapt industrial controls for use in the salt water environment; this causes severe problems. We intend to provide the marine industry with a complete line of electric and electronic control components and systems designed for the marine environment.

In the years to come, we will be able to provide all electronic interlocks, feedback and alarm systems.

Currently our electric controls are being sold internationally to many O.E.M.'s who appreciate the salt water resistance and robust construction of these items.

Contact Kobelt Manufacturing for more information.



2075



2072



2074



2071

WIRE-OVER-PULLEY CONTROLS

Of all the various types of mechanical marine propulsion controls available, our experience has shown that the endless wire-over-pulley system gives accuracy and best response. The push-pull control, even with the finest components, will reach a point where it cannot meet certain requirements, i.e. long cable runs with many bends and several stations. At this point, if mechanical controls are required, we recommend the endless wire-over-pulley control system. Although this type of control requires a little more planning and installation time than the push-pull system, its operation is extremely sensitive and light.

It is important to remember that the wire-over-pulley controls can be partially incorporated into push-pull systems as well as pneumatic systems. In fact, we manufacture all control components required for push-pull, wire-over-pulley and pneumatic systems.

Wire-over-pulley components are available for either two lever or single lever installations. For complete details on the Kobelt wire-over-pulley system contact your local Kobelt dealer.

Kobelt's wire-over-pulley controls are manufactured under one or more of the following patent numbers:

**Canadian
Patent Numbers**
643930
737682
767393
787168
952345

**U.S.
Patent Numbers**
3202011
3330390
3363881
3496833
3818771



PNEUMATIC CONTROLS

Kobelt pneumatic controls are the finest in the industry. We manufacture all components for any type of pneumatic control system.

This control system features a limitless number of control stations. Additional control stations do not affect the performance of the control system. This means that, regardless of the distance or the force required, the control heads move effortlessly.

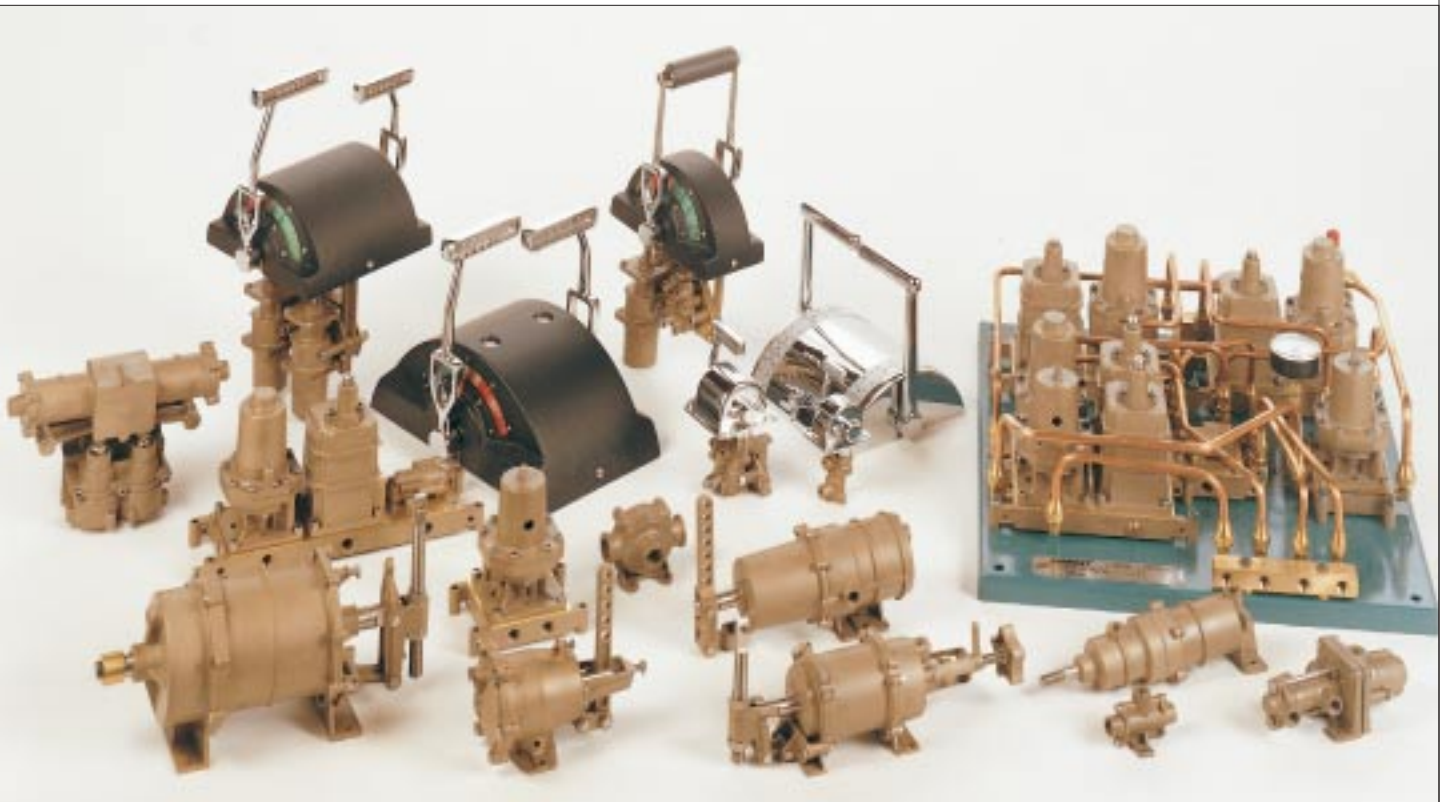
The pneumatic control system is one of the most flexible systems we offer. Since the system does not depend on the force you apply (everything is done by air signals) we can automate and synchronize as much, or as little, of your propulsion equipment as desired. The control options are almost limitless. We offer propulsion timing packages with, and without, shaft brakes. A timing system will protect your propulsion equipment. It ensures that the gear box is engaged before you accelerate your engine. The system will allow you to go from full ahead to full astern without damaging your gear box or stalling your engine.

You will find that the pneumatic system is best suited for vessels anywhere between 50 to 600 feet (15 to 180m). For the ultimate in styling, flexibility and for fingertip control, contact your nearest Kobelt distributor about Kobelt pneumatic controls.

Kobelt's pneumatic controls are manufactured under one or more of the following Patent numbers. Further patents pending.

Canadian Patent Numbers:

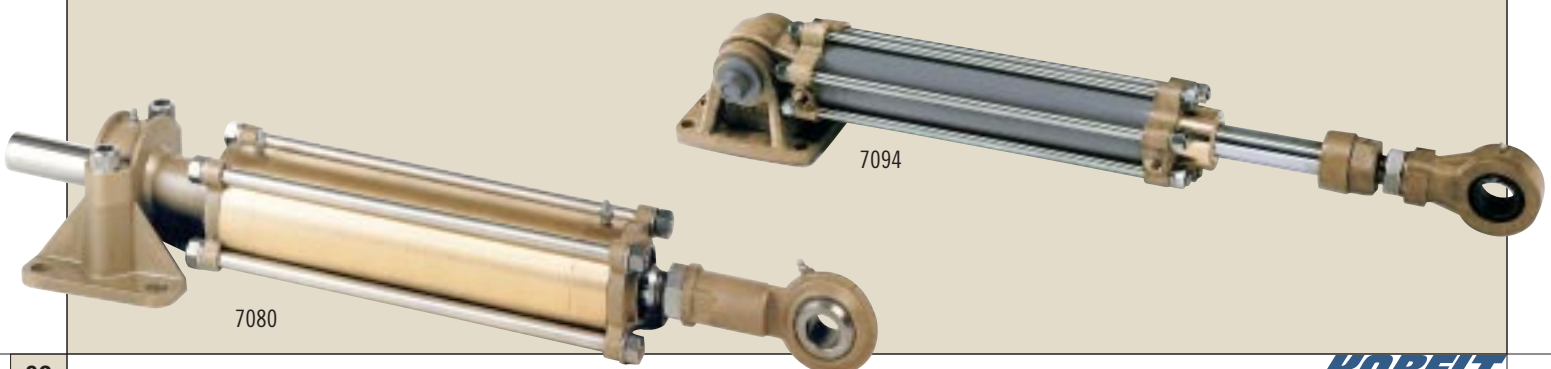
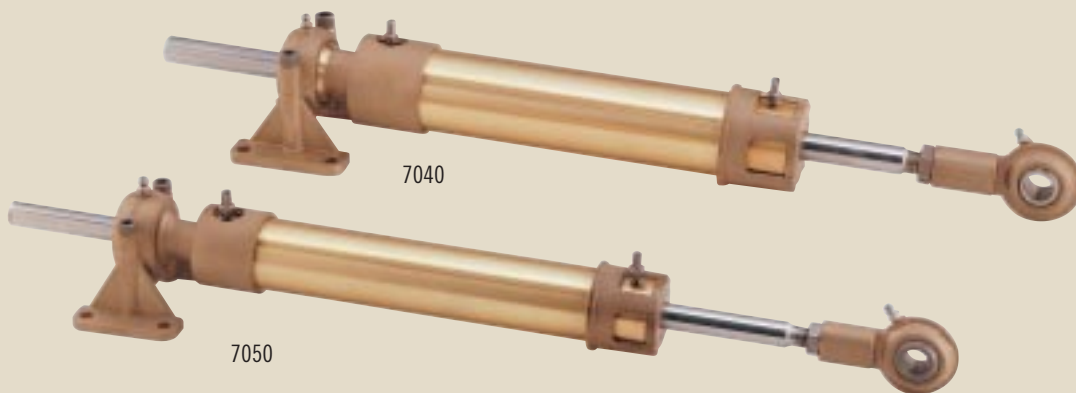
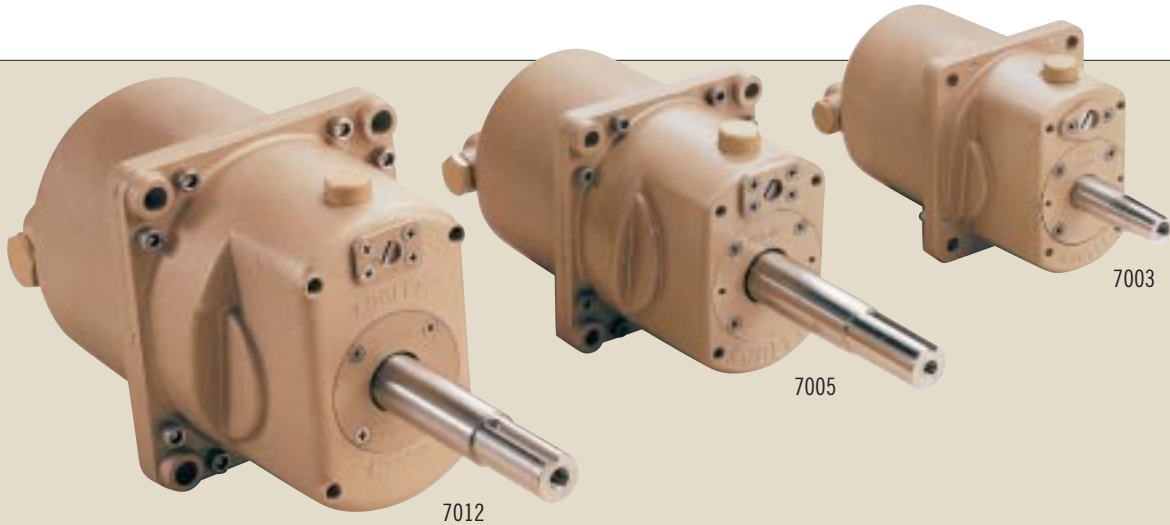
Canadian Patent Numbers	U.S. Patent Numbers
828507	3455186
922594	3724970
923767	3766835
928607	3783742
932600	3795110
936055	3820438
939202	3826490
947619	3838630
964138	3900090
964555	



HYDRAULIC STEERING GEAR FOR MARINE APPLICATIONS

Kobelt Manufacturing is an innovator when it comes to new steering techniques with boats requiring rudder torques from small boats up to 160 ton meters. Due to Kobelt's bronze diecasting capabilities, we are in a position to offer products not available from any other source in the world. Most manufacturers today make their products in either plastic or aluminium. Kobelt Manufacturing specializes in bronze and stainless steel at very competitive prices.

Due to our high-tech manufacturing process we are capable of producing a superior product. It is for this reason that we can extend our usual five-year warranty to steering gear components.



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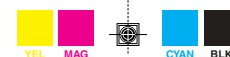
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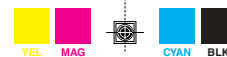
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