



READ MANUAL BEFORE OPERATING
KEEP MANUAL FOR FUTURE REFERENCE

★ BUILT USA TOUGH ★

MACHINE MANUAL



DM162



RIGHT IN THERE WITH YOU.



DURACABLE®
— MANUFACTURING CO —

DM162 MACHINE MANUAL

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WARRANTY

Duracable Manufacturing Company warrants the DM162 machine to be free from defects in material and workmanship for a period of three years from the date of purchase. Warranty service can be obtained by contacting Duracable Manufacturing Company at the address listed below. If a defect is covered by warranty, Duracable Manufacturing Company will repair or replace the defective machine or component without charge for labor or materials (freight is not included).

Warranty of the machine is limited to the original purchaser. Duracable Manufacturing Company assumes no responsibility for damage or injury from accident, neglect, abuse, misuse or from damage due to repair or alterations by others. This warranty does not cover damage to the machine from use of parts other than genuine Duracable brand parts.

Duracable Manufacturing Company's sole obligation and the original purchaser's sole remedy under this warranty shall be for repair or replacement as described above. All other warranties, expressed or implied, including but not limited to, implied warranties of merchantability and fitness for a particular purpose, are disclaimed. In no event shall Duracable Manufacturing Company be liable for any incidental or consequential damages.

PARTS AND SERVICE INSTRUCTIONS

Parts can be purchased from Duracable Manufacturing Company. Service work is also available. Service is performed by trained factory personnel. Machines sent to the factory for evaluation and repair can be estimated and quoted prior to service work. When sending a machine, be sure to include the return address and include instructions on how the repair should be handled. Instructions can either be included with the machine, explained to your account manager over the phone (800-247-4081), or faxed (515-223-6109).

IMPORTANT

Keep this manual in a safe, convenient place for future reference. Important information about this machine, its diagrams and warranty information are included in this manual.

Serial Number: _____

Date of Purchase: _____

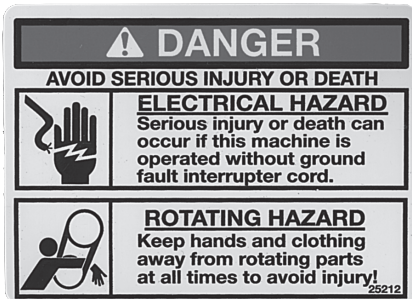
Duracable Manufacturing Company
300 Ashworth Road • West Des Moines, IA 50265

SAFETY LABELS

Duracable Manufacturing uses three signal words on its safety labels and instructions. These words have the following definitions:

⚠ DANGER

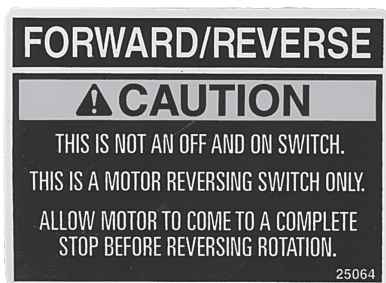
A 'Danger' label indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situation, typically for machine components that, for functional purposes, cannot be guarded. The word 'danger' will be in white letters on a red background.



⚠ CAUTION

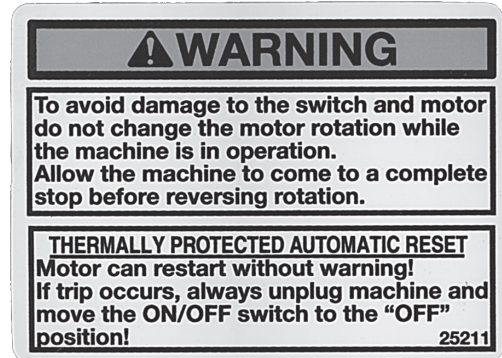
A 'Caution' label indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. The word 'caution' will be in black letters on a yellow background.

The safety label format includes the signal word and symbol, a picture (not required), and the message.



⚠ WARNING

A 'Warning' label indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices. The word 'warning' will be in black letters on an orange background.



INFORMATION AND SPECIFICATIONS

Safe Machine Operation

Read this machine manual thoroughly before assembling or operating the machine. Become familiar with its controls and proper use before operating. Keep this manual in a handy place for reference and parts replacement referral. This machine is designed specifically for the purpose of opening and cleaning drains. Use it for this purpose - do not use it for other purposes.

Use gloves to protect your hands. Wear them to feed and retrieve cable. Use a material that cannot be easily grabbed by the cable. Most leather gloves and certain rubber gloves work well. Duracable Manufacturing has each type available through the Duracable Product Catalog. Also, avoid the use of loose-fitting clothes or jewelry when operating this machine. Keep guards in place to protect the operator from the electric motor and electrical wiring. These guards are for safety protection and must be in place when running the machine.

Each machine is equipped with an air foot switch. Use of the air foot switch to operate the machine is required for safe operation. This allows the machine operator to turn the machine on or off with the foot while keeping both hands on the cable. Select a work area free from obstruction with room to work. Keep the machine within three feet of the pipe opening, allowing only enough room to work. This is required to shorten the length of exposed cable, thus providing maximum control in high-torque situations. Take a position that is comfortable to the left or right side of the machine for feeding or retrieving cable. For high work openings, the machine can be placed on its back as needed.

When performing a job, use the smallest blade first. Rinse the pipe after each blade is run through the line in order to clean out loosened debris. Then follow with the increasing sizes of blades until the size used is one that actually scrapes the side of the pipe or sewer. The cutting blades are flexible and can be compressed to enter most cleanout openings. Centrifugal force created by the spinning cable forces the blades to expand to their natural diameter or to the walls of the pipe. Maintain a very keen cutting edge on the blades at all times. Place two hands on the cable between the outlet of your machine and the cleanout, and keep them there at all times during operation. Your hands placed in the proper position will provide a guide for the cable.

As the blade makes contact with an obstruction in the line, it stops the blade from turning and builds torque in the cable. Do not permit the blade to get hung up in an obstruction for more than three seconds. Torque buildup can be both helpful and dangerous. It is helpful when pulled from the obstruction in a timely manner. When the cable is pulled away, the tension is released and the blade turns at a high speed. When the blade is free, feed it back into the obstruction to make use of the built-up power to clean the line. It is dangerous because excess torque can cause looping over of the cable. Serious injury to fingers and hands is possible unless precautions are observed.

When retrieving cable from the line, feed the cable into the machine until the blade is close to the clean out opening. Shut off the machine and hand-feed the remaining cable into the

machine. Use of a Power Cable Feed and Return (PCFR) will reduce stress and strain on both the drain cleaning machine and the service technician. Duracable Manufacturing recommends a PCFR unit be used on every DM162 machine. This unit mounts in front of the head casting assembly and with movement of a handle will feed or retrieve cable from a sewer line. Mounting time for the unit is minimal.

Unpacking Your Machine

The DM162 is shipped to you pre-assembled and ready for use, with the following parts: the base machine, a reel, a revolving arm, and PCFR. When it arrives, remove the parts immediately and inspect for damage. If any of the contents are damaged, contact your motor freight carrier immediately.

Moving Your Machine

Break the machine down into lighter-weight components to move it to and from the job site. To do this, wrap the GFCI cord and the air foot switch pedal around the cord ties and velcro. Loosen the swing bolts and remove the PCFR and revolving arm as one piece. Slide the inner reel off. Secure the cable inside the outer reel and then remove the outer reel. Various accessories are available from Duracable Manufacturing to assist and protect the operator during the moving process.

Lubrication Maintenance

Caution: Do not over oil these points.

- Head Bearing Assembly - The roller bearing, located in the front assembly, requires monthly lubrication. Use a grease gun to lubricate the zerk fitting with multipurpose grease. A lithium-base grease is recommended.
- Reel Shaft and Reel Bearings - The reel shaft requires monthly lubrication. Use a multipurpose grease or heavy oil. Keeping the shaft lubricated means the reel will slide freely and will not 'freeze' to the shaft and need to be repaired. The reel bearings require some light oil monthly.
- Wheels - A light oil on the axle every month keeps the wheels rolling freely instead of 'freezing' to the axle.

Cable Care Instructions

Take care of your cable for optimum performance. The recommended care procedure is as follows:

- Break in a new cable. To relieve the stress on new cable that has been coiled since its manufacture, put it in a clean line and run it for 10 minutes.
- Oil the cable once a week.
- Rinse the cable immediately after each use with the hottest water available. This is especially important if the cable was in acid or alkali during use.
- When one end of the cable begins to show wear, rewind and use the opposite end. (Tips: order the same kind of end fittings on both ends of the cable.)
- If the cable kinks, cut out the kink and splice the cable ends together.

INFORMATION AND SPECIFICATIONS

Frame

The DM162 has a continuously welded uni-body frame that is constructed of steel. Smoke-colored polycarbonate guards allow you to see the workings of your machine, while maintaining safety. Located on the back of the machine are cord wrap hooks for easy winding and storage of your electrical cord and foot pedal cord. A steel head bearing holds the reel in place. A swing bolt on each side of the head-bearing housing allow for easy and quick release of the reel. Non-marring rubber pads do not leave marks on the customers' floors. A winch hook is available for the frame as an accessory. A tool box is a GREAT standard feature to the machine, allowing for quick and easy access to the specific tools for the machine and more.

Electrical Wiring

The machine's electrical wiring is in an insulated jacket leading to the easy-access switch box located to the side of the machine. The Ground Fault Circuit Interrupter (GFCI) is built into the electrical cord to protect the operator against electrical shock or electrocution. The foot pedal is standard equipment and allows operators to start and stop the machine with their foot while their hands stay on the cable.

RPM/Drive

The DM162 has a heavy-duty 1/2 HP industrial motor and runs standard at 265 rpm. The gearbox has a 10:1 gear ratio for more torque and power. Another feature is the standard heavy-duty 17-amp switch.

Maneuverability

The DM162 standard 10" diameter wheels and 2" wide tread provide greater mobility and ground clearance, while still fitting through narrow doorways. A two-position adjustable handle is also standard, with a lanyard to lock the handle into the desired position. Stair glides come standard for going up and down stairs easier. The standard handle allows you to lay the machine on its back for working with overhead cleanouts and wall cleanouts.

Cable and Reel Selections

The DM162 is designed for a 18" enclosed polyethylene reel that will hold 5/8" cable. The reel comes with a 4' tailpiece.

Standard Package

The DM162 standard package (part#DM162SP1) comes with the following items: revolving arm, 1/2 HP motor at 265 rpm, PCFR, 18" enclosed polyethylene reel, 4' tail piece, 5/8" x 80' cable, and choice of end fittings.

DM162 FEATURES

1/2 HP Motor

265 RPM

10:1 Gear Box

18" Reel

5/8" x 80' Cable

Telescoping Handle

PCFR

3-Year Warranty (2-Year Warranty on Motor)

Continuous Weld Frame Construction

MACHINE SPECIFICATIONS (APPROXIMATE)

Length of Machine 23.25"

Length of Machine with PCFR 30.25"

Width of Machine 19"

Height of Machine with Handle Lowered 38"

Height of Machine with Handle Raised 43.25"

Weight of Machine with Arm, Reel, PCFR 107 lbs

Weight of 10" Wheels 1.95 lbs

Weight of PCFR 12 lbs

Weight of 18PR, 18" Polyethylene Reel 19 lbs

Line Size 2" to 6"

USES: residential, light commercial, floor drains

DM162 MACHINE MANUAL

INFORMATION AND SPECIFICATIONS

REELS		REVOLVING ARM	CABLES*	
Part #	Description	Part #	Part #	Dimensions
18PR	18" Polyethylene Reel	71RA	__50-080 __62-080	1/2" up to 80' 5/8" up to 80'

* Add **CH** in front of cable part # for Hollow Core.

* Add **CI** in front of cable part # for Inner Core.

* Maximum length of cable is not always the recommended length.

* Custom lengths are available.

MACHINE PACKAGES

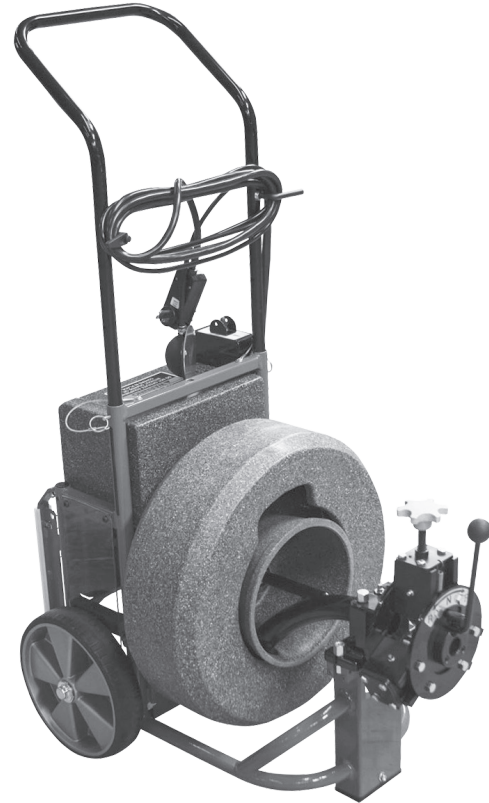
Part #	Horse Power	RPM	Reel	Cable
DM162SP1	1/2 HP Motor	265 RPM	18PR	5/8" x 80'

TAIL PIECES

Part #	Description
TS50LB-004	4' Loose Wound Tail Piece for 1/2" Cable
TS62-004	4' Loose Wound Tail Piece for 5/8" Cable

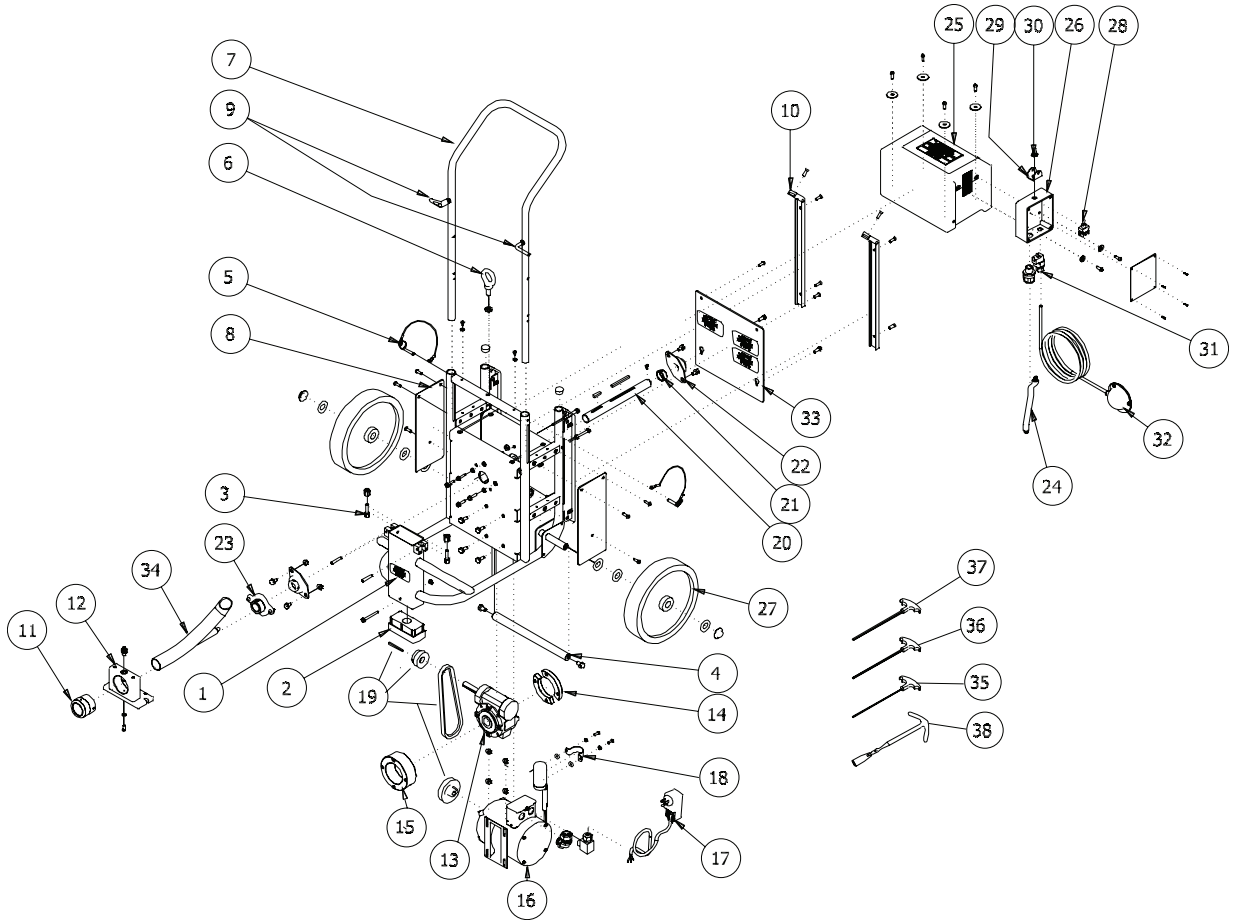
MACHINE ACCESSORIES / REPLACEMENT PARTS

Part #	Description
71005K	1/2 HP Motor Kit
92PCFR	Power Cable Feed & Return
25220K	10" Polyethylene Wheel Kit
NWKU	10" Rubber Wheel Kit
WWKU71	10" Pneumatic Wheel Kit
71052K	Stair Glide Kit (2 kits necessary)
71070K	Loading Wheel Kit
25074	Air Foot Pedal (rubber) with 10' Tubing
25061	Air Switch with Strain Relief Nut
EB1K	Winch Hook Kit (eye bolt and washer)

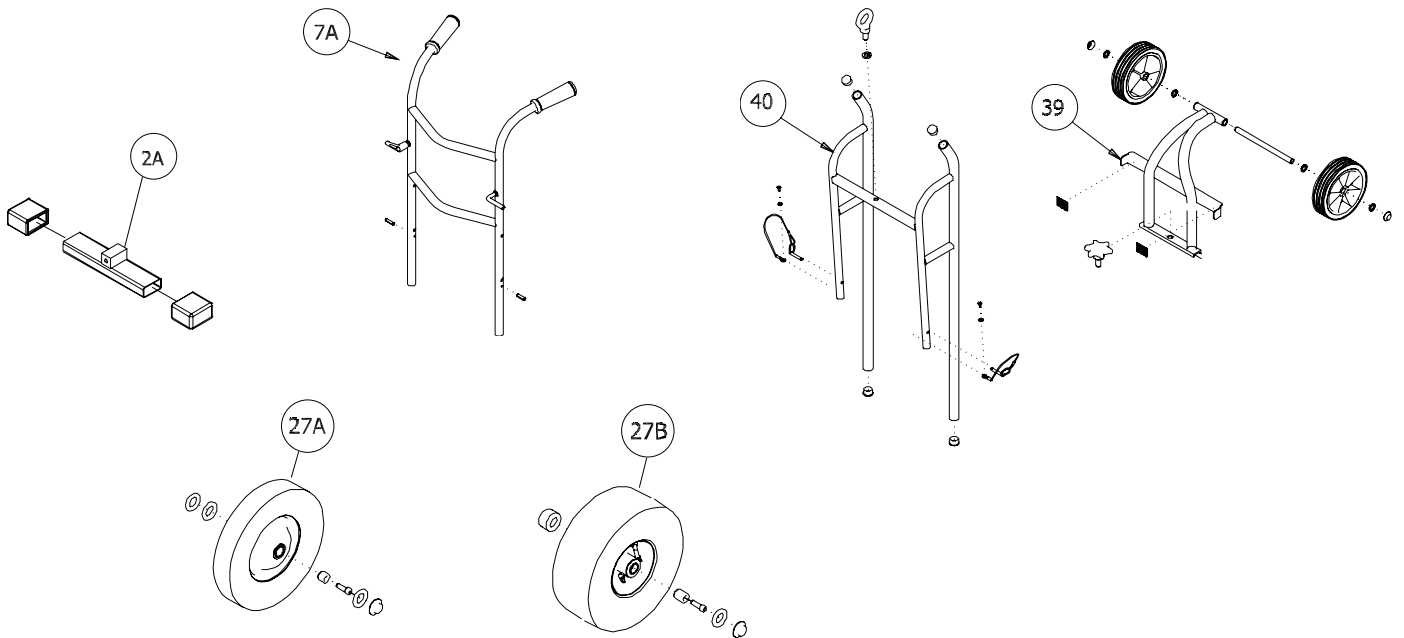


* Shown with optional two-grip handle kit

DM162 SCHEMATIC




OPTIONAL PARTS



DM162 MACHINE MANUAL


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 The entire line item in **bold** identifies the name of an entire assembly. The “Z” shaped arrow identifies all the parts that make up that assembly. You can purchase the entire assembly, or just the individual parts.

ITEM	QTY.	PART#	DESCRIPTION
1	1	D71015K	Frame Assembly
	1	D71015	Painted Frame Assembly w/Rivet Nuts
	1	D25000	Square Logo for machines
2	1	MM56K	Rest Pad Kit
	1	MM56	Rest Pad
	1	FLSC17	1/4-20 x 2 1/4" L Flange Hex Screw Zinc Coated
	1	FLNUT5	1/4-20 Flanged Hex Nut
2A	1	92073K	Front Stabilizer Kit
	1	92013I	Front Stabilizer Installation Instructions
	1	FLSC17	1/4-20 x 2 1/4" L Flange Hex Screw Zinc Coated
	1	FLNUT5	1/4-20 Flanged Hex Nut
3	2	MM42K	Swing Bolt Kit
	1	MM42	Swing Bolt
	1	MM43	Swing Bolt Nut
	1	RLPIN14	Roll Pin
4	1	71030K	Push Bar Kit
	1	71030	Push Bar
	2	FLSC7	3/8-16 x .625 L HX HD Flange Screw
5	2	JWKLK	Detent Ring Pin Kit
	1	JWKL	5/16" Dia. Detent Ring Pin w/8" Lanyard
	1	WA5	#10 External Tooth Lock Washer
	1	PHSC12	#10-24 x 3/8" Pan Head Thread Cutting Machine Screw
6	1	EB1K	Eye Bolt Kit
	1	EB1	1/2"- 13 x 1" L Forged Eyebolt
	1	WA16	1/2" Dia. Split Lock Washer
7	1	71026K	Loop Handle Kit
	1	71026	Loop Handle Assembly (25223K Cord Wrap Kit Included)
	2	RLPIN18	3/16" Dia. X 1" L Roll Pin
7A	1	71025K	Two Grip Handle Kit
	1	71025	Two Grip Handle Assembly (25223K Cord Wrap Kit & 2 Grips Included)
	2	RLPIN18	3/16" Dia. X 1" L Roll Pin
8	2	71045K	Side Cover Kit
	1	71045	Side Cover
	3	SHCS31	1/4-20 X 3/4 SBHS
9	1	25223K	Cord Wrap Assembly Kit
	1	25223	Cord Wrap Finished
	1	25224	Rotating Cord Wrap
	2	FLNUT5	1/4-20 Flange Nut
10	2	71052K	Skid Plate Kit
	1	71052	Skid Plate
	2	FHMS9	.25-20 X .875 L Flat Head Socket Screw
11	1	25108	Steel Head Bearing

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DM162 SCHEMATIC



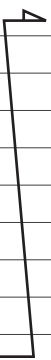




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ITEM	QTY.	PART#	DESCRIPTION
12 	1	71060K	Head Casting Kit
	2	MM44	Taper Bolts
	1	SHCS44	1/4-20 x 9/16 Skt. Hd. Cap Screw
	1	WA22	1/4 Lockwasher
	1	25110	.375-24 GREASE FITTING
	1	92060	Head Bearing Housing
13	1	82060	10:1 Gear Reducer
14 	1	92063K	Gear Mounting Block Kit, Rear
	2	92063	Gear Mounting Block, Rear
	4	WA35	1/4 Internal Tooth Lock Washer
	4	FLSC10	6-1 x 25MM Hx HD Smooth Flange Zinc Coated Screw
15 	1	92062K	Gear Mounting Block Kit, Front
	1	92062	Gear Mounting Block, Front
	4	WA35	1/4 Internal Tooth Lock Washer
	4	FLSC11	6-1 x 50MM Hx HD Smooth Flange Zinc Coated Screw
16 	1	71005K	1/2 HP AC Motor Kit
	1	71005	1/2 HP 1725 RPM 60 Hz AC Emerson Motor w/ Conduit Box Assembly
	1	25059W-BK	18 GA Wire Lead, Black
	1	25059W-WH	18 GA Wire Lead, White
	1	ECT40	1.44 Dia Capacitor End Cap
17 	1	GFC123K	Right Angle GFCI 15 A Black, Kit
	1	GFC123	Right Angle GFCI 15 A Black
	1	ECT34	90 Deg Snap Elbow 1/2" NPT
	1	ELN1	Bridgeport 101 1/2" Locknut
18 	1	ECT39K	Capacitor Mt. Strap Kit
	1	ECT39	Capacitor Mounting Strap
	2	WA5	#10 Ext. Tooth Lock Washer
	2	PHSC6	10-32 X 5/8" L Pan HD. M. S. Zinc Coated Screw
19 	1	71010	265 RPM Drive System
	1	25086	4L x 5/8 ID x 2" OD Sheave, Gearbox
	1	25088	4L x 1/2 ID x 3" OD Sheave, Motor
	1	11012D	4L240 "V" Belt
	1	KEY12	3/16 x 2" Square Key (Gearbox)
	1	KEY10	3/16 x 1-1/4 Square Key
20 	1	92061K	Reel Shaft Kit
	1	92061	Reel Shaft
	1	KEY9	1/4 x 2-3/4" L Square Key (Gearbox)
	1	KEY7	1/4 x 1" L Square Key (Drive Plate Assy)

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DM162 SCHEMATIC

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
ITEM	QTY.	PART#	DESCRIPTION
21 	1	25125K	Reel Shaft Collar Kit
	1	25125	Reel Shaft Collar
	1	FILHMS1	10-24 x 3/8" L FIL. HD. SLTD. Zinc Coated Screw
22 	2	SB5K	Flanged Bearing Kit
	1	SB5	1" ID x 1-1/8" L Flanged Bearing (Reel Shaft)
	2	FLSC13	5/16-18 x 1/2" L Flanged Whiz Lock Zinc Coated Screw
	2	FLNUT3	5/16-18 Flanged Lock Nut
	23	92040	Drive Dog Assembly w/Set Screw
24 	1	71018K	Wire Loom Kit
	2	ELN1	Bridgeport 101 1/2" Locknut
	1	ECT30	Mencom PCG Straight 1/2" Connector
	1	ECT43	Steel 1/2" - 3/4" x 90 Deg Cord Fitting
	2	SOOW146	14-6 Cord X 21" L
	5	ECT21	Nylon FEM Disconnect 16-14 AWG
	5	ECT28	Nylon Crimp Style 16-14 Wire Joint
	2	ECT29	Nylon Crimp Style 14-12 Wire Joint
	1	25059W-GR	9" Ground Wire - Green w/ ECT17
	1	WA2	#8 Ext Tooth Lock Washer
25 	1	71020K	Toolbox Kit
	4	SHCS31	1/4-20 x 3/4 Button Head Socket Screw
	4	WA47	1/4 Body Washer
	1	71020-2	Toolbox w/Lid Assembly
	1	25066	1 - Step/Cover Warning Decal
	2	RNUT3	2 - 1/4 Rivet Nut for Plastic
	1	MM41	1 - Keyless Cam Lock w/ Hardware
	1	MM53	1 - Ribbed Matting, 3 In. Lg.
26 	1	71021K	Switch Housing Kit
	1	92021	Switch Housing w/ Labels
	1	92022	Switch Housing Cover w/ Labels
	4	PHSC7	6-32 x 3/8" L Pan HD Zinc Coated Screw
	2	WA44	1/4 ID x 3/4 OD Flat Washer
	2	SHCS31	1/4-20 x 3/4 L BTN SKT HD Cap Screw
	27 	1	25220K
2		25220	10" Polytech Silver Mag Wheel
6		WA18	13/16 ID x 1-1/2 OD x 11 GA Flat Washer
	2	PNUT1	3/4 ID Zinc Push Nut
27A 	1	NWKU	10" Rubber Wheels
	2	JWKN	10" Narrow Rubber Wheel
	6	WA18	13/16 ID x 1-1/2 OD x 11 GA Flat Washer
	2	PNUT1	3/4 ID Zinc Push Nut
	2	92015NA	3/4 DIA X .5" LG Axle Extension
	2	SHCS11	5/16-18 x 1" LG Socket Head Cap Screw

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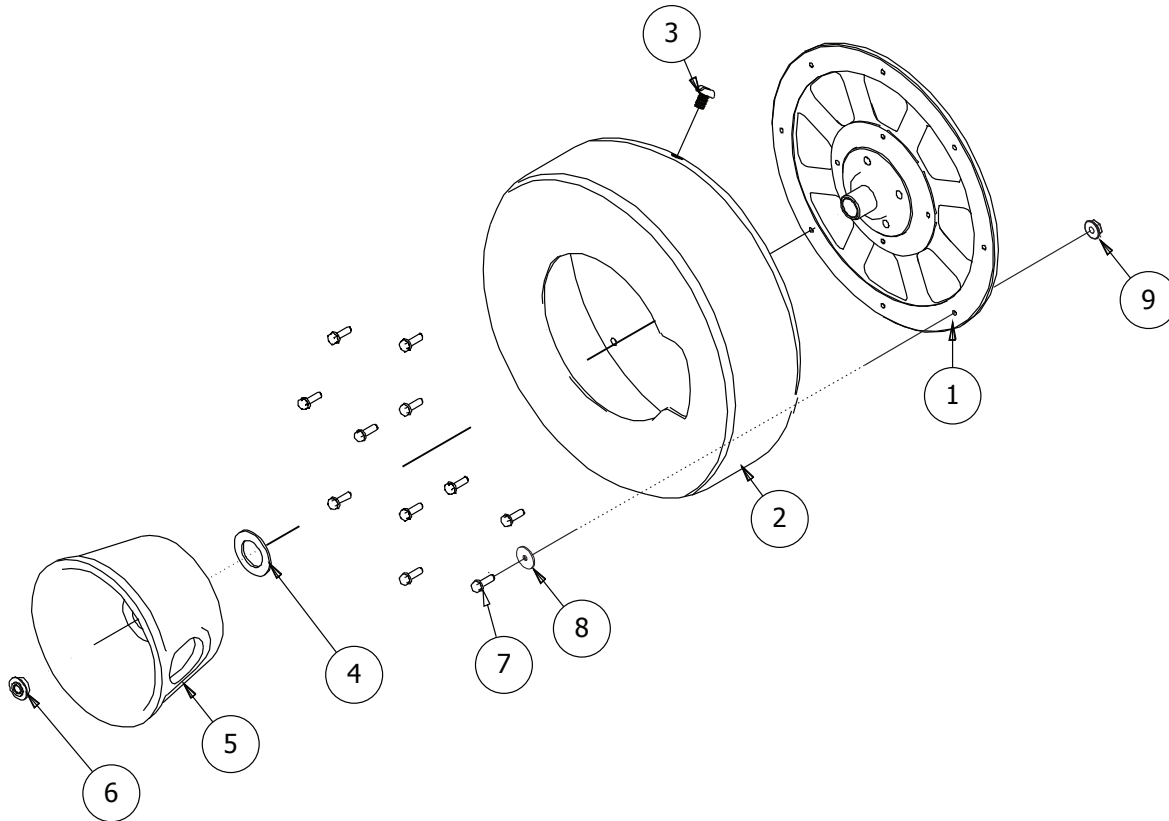
DM162 SCHEMATIC



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ITEM	QTY.	PART#	DESCRIPTION
27B 	1	WWKU71	10" Tire & Wheels
	2	JWKW	10" Wide Air Filled Tubed Tire & Wheel
	2	WA18	13/16 ID x 1-1/2 OD x 11 GA Flat Washer
	2	PNUT1	3/4 ID Zinc Push Nut
	2	71015NB	3/4 DIA X 1.5" LG Axle Extension
	2	92017	3/4 ID x 1 OD x 3/4" LG Sleeve
	2	SHCS11	5/16-18 x 1" LG Socket Head Cap Screw
28	1	25005	3 Position Toggle Switch
29	1	25015	Switch Guard
30	1	ECT26	Switch Rubber Boot w/Nut
31	1	25061	Remote Air Actuated Switch
32	1	25074	Foot Pedal w/ 10 Ft Tubing
33 	1	71050K	Motor Cover Kit
	1	71050	Motor Cover w/ Labels
	1	25068	GFI Cord Danger Decal
	1	25067	Foot Switch Warning Decal
	1	25063	Rotating Danger Decal
	4	FLSC4	1/4-20 x 3/4" L HX Flange Screw Zinc Coated
34	1	71RA-L	DM162 Revolving Arm
35	1	HKEY9	1/8 x 9" L T-Handle Hex Key Wrench
36	1	HKEY10	3/16 x 9" L T-Handle Hex Key Wrench
37	1	HKEY11	4MM (5/32) x 9" L T-Handle Hex Key Wrench
38	1	MM40	5/8 x 9" L Swivel T-Handle Socket Wrench
39 	1	71070K	Loading Wheel Kit
	1	71070	Loading Wheel Frame
	4	WA20	0521 ID X .75 OD X .06 Washer
	2	25221	6" Dia x 1 7/16" Wd Wheel
	2	PNUT3	1/2" Dia Axle End Cap
	1	MM59	12" x 1 1/2" Ribbed Matting
	1	KNOB6	Knob & Stud Assembly
40 	1	71080K	Ramp Skid Kit
	1	71080	DM162 Ramp Skid
	4	CPLUG7	7/8" ID Tubing End Cap
	2	JWKL	1/4 Dia x 1 1/4" Lg Pin w/Lanyard
	2	WA5	3/16" ID External Tooth Lock Washer
	2	PHSC12	10-24 x 3/8 Pan Head Screw
	1	WA16	1/2" Dia Lock Washer
	1	EB1	1/2" Eye Bolt

18PR (18" POLYETHYLENE REEL) SCHEMATIC FOR DM162



ITEM	QTY.	PART#	DESCRIPTION
1	1	772302	Outer Drum Mounting Plate
2	1	771800	18" Outer Drum
3	1	MM60	Plastic Reel Drain Plug
4	1	SB21	Oilube Bronze Thrust Bearing
5	1	772301	8 3/4" OD Inner Drum
6	1	D6A	7/16 ID X 1 1/64 OD X 21/64 L Flanged Bearing
7	11	FLSC9	5/16-18 x 1" Flange Whz Lock
8	1	WA34	5/16 x 1-1/4" Flat Washer
9	1	FLNUT3	5/16-18 Flange Lock Nut

POWER CABLE FEED AND RETURN (PCFR)

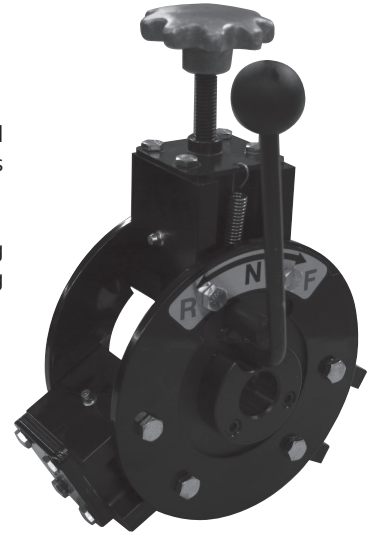
Power Cable Feed & Return

The Power Cable Feed & Return (PCFR) is designed to help you run long lengths of cable into and out of lines. It will help you cut through roots or heavy blockages in any drain line. The PCFR's Length is 6"; Width is 9"; Height is 12"; and Weight is 12 pounds.

The PCFR is standard equipment on DM162. Note: The recommended grease for the housing blocks is Lps® Thermaplex 70614 or Lubri-Plate® 630-Aa. Lubricate the rotation pin and bearing surface with Lps® 2 Industrial Lubricant 00216, WD-40® Lubricant or equivalent.

Adjusting PCFR by Cable Size

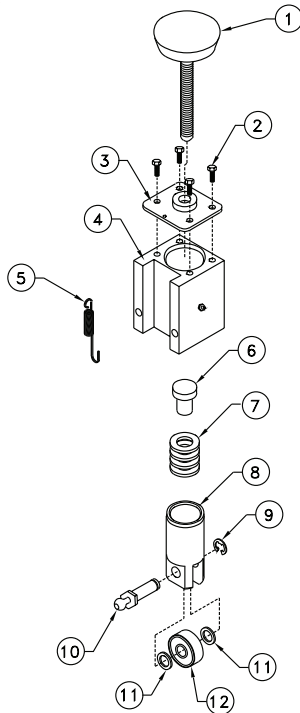
3/4" Cable:	6 Sizing Plates per Block
11/16" Cable:	5 Sizing Plates per Block
5/8" Cable:	4 Sizing Plates per Block
1/2" Cable:	2 Sizing Plates per Block
13/32" Cable:	1 Sizing Plate per Block
3/8" Cable:	0 Sizing Plates per Block



POWER CABLE FEED AND RETURN KITS (OPTIONAL)

Kit Part #	Description	Included Parts	Quantity	Description of Included Parts
PCFR23SER	Power Cable Feed and Return Piston Kit	PCFR14 PCFR25 RRING1 SB1 WA20	1 1 2 1 2	PCFR Piston PCFR Rotation Pin 11/16" x 1/32" x 11/32" External Retaining Ring PCFR Drive Bearing 1/2" x 3/4" x 1/16" Washer
PCFR22SER	Power Cable Feed and Return Bearing Kit	SB1 WA20	1 2	PCFR Drive Bearing 1/2" x 3/4" x 1/16" Washer

PCFR SPRING KIT



No.	Qty.	Part No.	Description
1	1	KNOB3	PRESSURE CONTROL KNOB
2	4	HHCS29	1/4-20 x .75 HEX HD CAP SCRW
3	1	PCFR15	UPPER PRESSURE PLATE
4	1	PCFR13	UPPER HOUSING BLOCK
5	1	MM35	EXTENSION SPRING
6	1	PCFR17	SPRING PAD
7	1	PCFR16	COMPRESSION SPRING
8	1	PCFR14	UPPER/LOWER PISTON
9	1	RRING1	EXTERNAL "E" RING
10	1	PCFR25	ROTATION PIN
11	2	WA20	MACHINE BUSHINGS
12	1	SB1	DRIVE BEARING

PCFR-KIT1 = (3)(5)

PCFR-KIT2 = (3)(4)(5)

PCFR-KIT3 = (2)(3)(4)(5)(6)(7)(8)(9)(10)(11)(12)

PCFR-KIT4 = ALL ITEMS AS SHOWN

PCFR BEARING KIT

THE PCFR22SER BEARING KIT INCLUDES THE FOLLOWING:

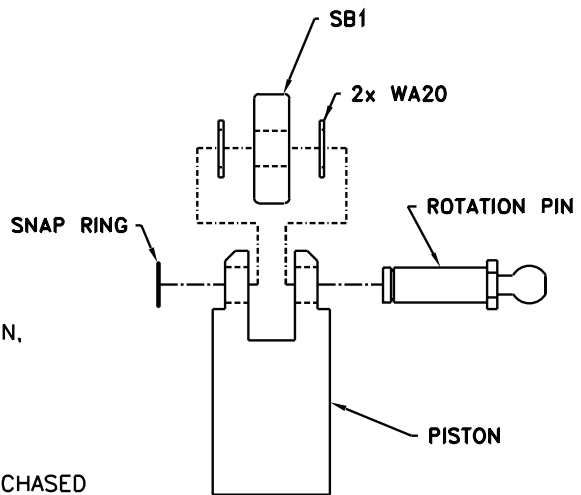
- * (1) SB1 BEARING
- * (2) WA20 SPACERS

IF THE PCFR WAS PURCHASED AND/OR MANUFACTURED ON OR PRIOR TO 1995 OR IF ONE OF THE FOLLOWING CONDITIONS OCCUR WHILE INSTALLING THE BEARING KIT:

- 1) THE SB1 BEARING FITS LOOSELY ON THE ROTATION PIN,
- 2) THE SB1 BEARING RUBS OR TOUCHES THE PISTON,
- 3) THE SB1 BEARING WILL NOT ROTATE WHEN INSTALLED,

THEN THE PCFR23SER PISTON KIT WILL NEED TO BE PURCHASED SEPARATELY TO COMPLETE THE REPAIR TO THE PCFR.

IT REQUIRES THREE (3) PCFR23SER KITS TO PERFORM A COMPLETE REPAIR.



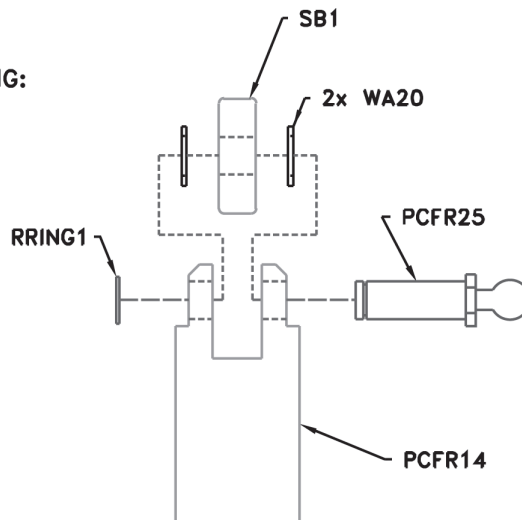
How to Install the PCFR22SER Bearing Kit

- | | | |
|---|--|---|
| <ol style="list-style-type: none"> 1. Remove the six hex flange nuts (FLNUT3). 2. Remove the rear disk (PCFR11). 3. Slip the upper housing (PCFR13) and/or the lower housings (PCFR18) from the hex bolts. | <ol style="list-style-type: none"> 4. Remove the upper piston (PCFR14) and /or the lower pistons (PCFR19). 5. Remove the spring retainer (PCFR23). 6. Pull out the rotation pin (PCFR25). 7. Remove the spacers (PCFR24) and the drive bearing (PCFR22). | <ol style="list-style-type: none"> 8. Clean all the parts in kerosene or a cleaning solvent. 9. Lubricate all moving parts and grease the housings provided with zerk fittings. |
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PCFR PISTON KIT

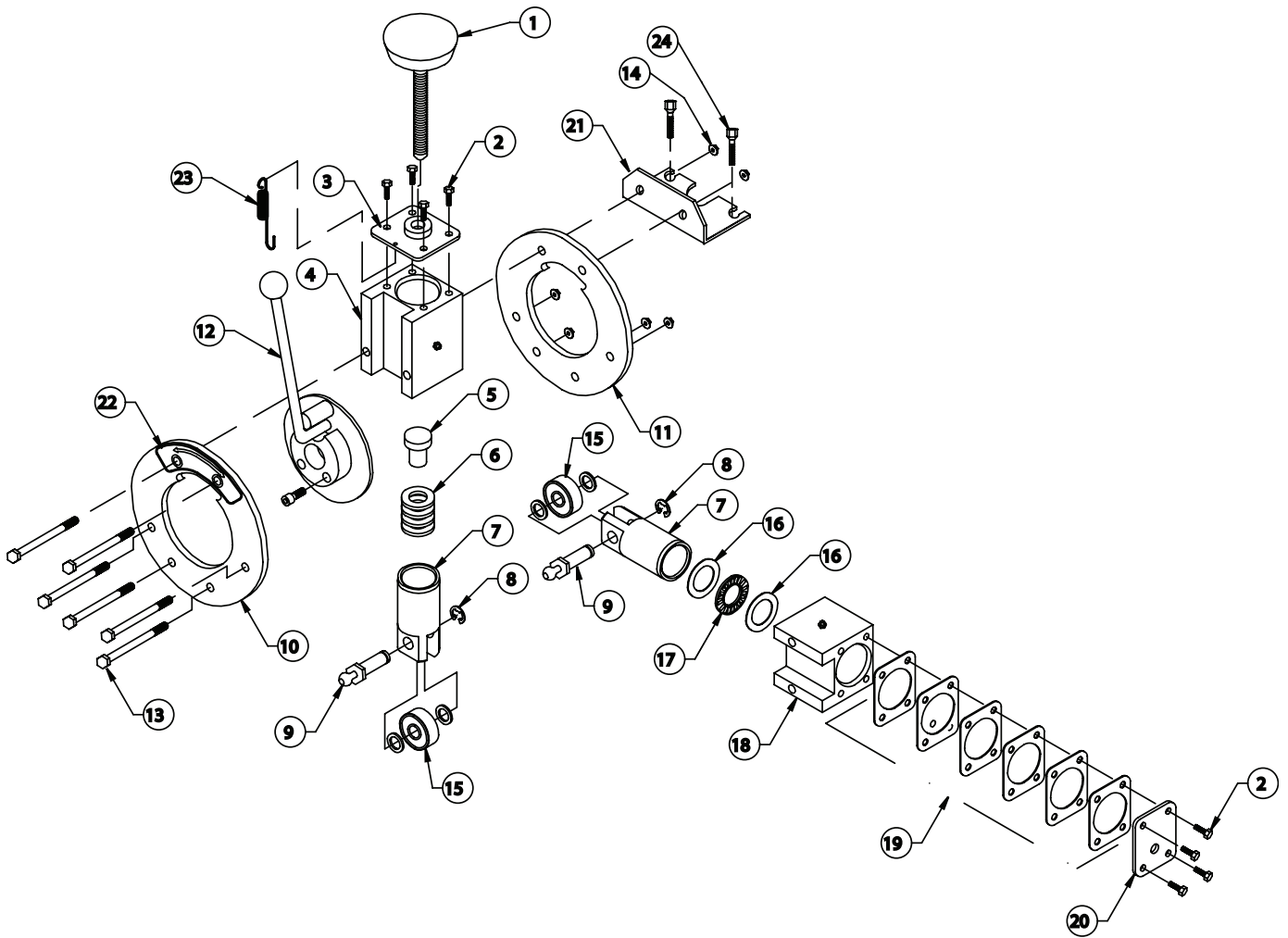
THE PCFR23SER PISTON KIT INCLUDES THE FOLLOWING:

- * (1) PCFR14 UPPER/LOWER PISTON
- * (1) RRING1 "E"-RING CLIP
- * (1) SB1 BEARING
- * (2) WA20 SPACERS
- * (1) PCFR25 ROTATION PIN




**** THREE (3) PCFR23SER KITS ARE REQUIRED TO PERFORM A COMPLETE REPAIR OF THE PCFR.**

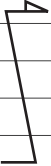


POWER CABLE FEED AND RETURN (PCFR) SCHEMATIC FOR DM162



DM162 MACHINE MANUAL

PCFR SCHEMATIC FOR DM162

 The entire line item in **bold** identifies the name of an entire assembly. The “Z” shaped arrow identifies all the parts that make up that assembly. You can purchase the entire assembly, or just the individual parts.

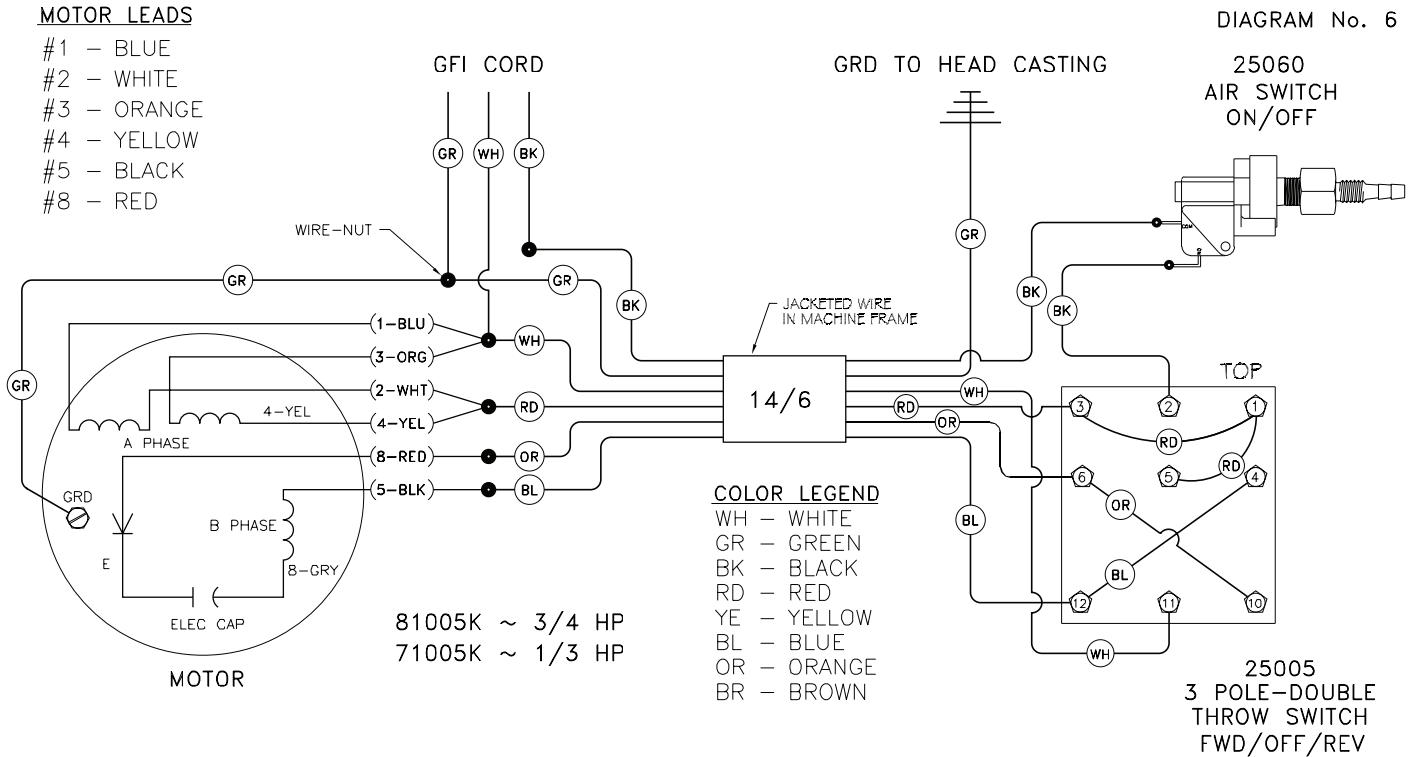
ITEM	QTY.	PART#	DESCRIPTION
1	1	KNOB3	Knob, Pressure Control
2	12	HHCS29	1/4”-20 x 3/4” Hex Head Cap Screw
3	1	PCFR15	Pressure Plate, Upper
4	1	PCFR13	Housing Block, Upper
5	1	PCFR17	Spring Pad
6	1	PCFR16	Compression Spring
7	3	PCFR14	Piston, Upper and Lower
8	3	RRING1	External “E” Ring
9	3	PCFR25	Rotation Pin
10	1	PCFR10	Mounting Disc, Front
11	1	PCFR11	Mounting Disc, Rear
12 	1	PCFR12	Direction Disc Assembly
	1	PCFR12E	Direction Disc
	1	KNOB2	Knob, Black Plastic
	1	PCFR33	Wear Ring
	2	SHCS6	1/4”-28 x 5/8” Socket Head Cap Screw
13	6	HHCS12	5/16”-18 x 3-1/2” Hex Head Cap Screw
14	6	FLNUT3	5/16”-18 Hex Flange Nut, Locking
15 	3	PCFR22SER	PCFR Bearing Kit
	1	SB1	Drive Bearing
	2	WA20	Machine Bushing
16	4	PCFR29	Thrust Washer
17	2	PCFR28	Thrust Bearing
18	2	PCFR18	Housing Block, Lower
19	12	PCFR20	Sizing Plate (lower housing blocks only)
20	2	PCFR21	Pressure Plate, Lower
21 	1	PCFR92	PCFR Mounting Kit
22	1	PCFR9	Decal, Reverse / Neutral / Forward
23	1	MM35	Extension Spring
24	2	MM44	Taper Bolt
	3	PCFR23SER	PCFR Piston Kit (kit includes items 7, 8, 9, and 15)

ELECTRICAL SCHEMATIC FOR DM162

DIAGRAM No. 6

25060
AIR SWITCH
ON/OFF

25005
3 POLE-DOUBLE
THROW SWITCH
FWD/OFF/REV



EMERSON & BALDOR MOTOR WIRING DIAGRAM - CD0001C
 1/3, 1/2 & 3/4 hp - 60 HZ ~ LOW VOLTAGE
 W/OUT A.T.O. ~ USING 6 CONDUCTOR SOW CABLE
 MODELS w/ BONFIGLIOLI VF49-P 10:1 GEAR REDUCER

The wiring diagram for the basic DM162 is shown above. If you experience any electrical difficulties in operating your machine, or you notice any frayed or inadequate wiring, or wiring that does not conform to the diagram, discontinue use of your machine immediately and have a qualified electrician repair it, or return it for repair to Duracable Manufacturing.

ELECTRICAL SAFETY

Handle with Care

Most of us take electricity for granted. It has been with us since the day we were born. We use it every day for light, phone, home appliances, tools, and other equipment that helps us maintain our standard of living. Although electricity is one of the safest energy forms, we tend to forget how powerful and dangerous it can be if not used properly.

Every year many people are injured or killed by electricity. Most of these accidents could have been prevented with simple precautions and careful use of electricity. Following are some tips to help avoid electrical accidents. Read through this information. Be sure you understand its importance. If you have questions or feel you may have a potential electrical hazard, tell your supervisor or call a qualified electrician immediately.

General Electrical Guidelines

Remember, electricity is always trying to make a circuit. It can travel through an electric wire, metal pipe, or even your body. Electrical shock can occur when you come in contact with an energized electrical unit and a good conductor. Shock can range from a slight tingle to a severe burn, or death by electrocution.

Electrical accidents happen in everyday situations. Most electrocutions occur in a wet environment or when an electrical product is being repaired or installed. Think about, and take precautions against, potentially dangerous situations.

When disconnecting electrical cords, pull on the plug rather than the cord to avoid damage. Use rubber gloves and rubber boots or insulated shoes to protect yourself, especially if you are in a wet or damp environment. Before using this machine, make sure a properly grounded, three-prong, 110-volt outlet is available. Where it is not available, use a three-prong adapter and connect the grounding lug to a known ground. Never cut off a grounding prong to fit a two-prong outlet. This eliminates the ground protection.

Electrical Procedures

Do not leave the machine plugged in when not in use. Even with the switch off, a machine can shock or electrocute its handler. The DM162 machine must be grounded to protect the operator from shock. This is accomplished by using the Ground Fault Circuit Interrupter (GFCI) Cord to ensure proper grounding.

Check electrical cords before each use for signs of damage. Repair or replace cords which are pinched, cracked, frayed, or worn. Remember, the GFCI offers no protection against electric shock for wiring preceding it in the system. Your GFCI is direct-wired to the machine, plug the GFCI into the power source receptacle.

Discontinue use and repair immediately any machine that causes the slightest shock or is damaged in any way. It could lead to a serious electrical shock or electrocution. Inspect the machine daily for wear or damage that might expose live electrical parts.

Ground Fault Circuit Interrupters (GFCI)

A GFCI works by detecting changes in electrical current flow. It breaks the circuit before serious injury can occur. For your protection, heed the "DANGER" warning on the machine cover and use the GFCI cord. The GFCI must be tested before each use. Use the following procedure:

- Insert the unit into a 110-volt, AC-grounded receptacle;
- Push the "test" button in - the red indicator light should go off;
- Push the "reset" button in - if the red indicator light goes on, the unit is ready for use;
- Do not use the unit if the light does not go on when reset;
- Do not use the unit if the indicator light remains on when the test button is pushed.

Extension Cords

- Use extension cords only when necessary.
- Position cords in use to prevent tripping hazards. Do not place them in areas where they can be damaged by traffic.
- Avoid coiling extension cords during use to prevent possible overheating of the cord.
- Discard cracked or damaged cords.
- The following cord sizes and lengths should be observed according to the National Electrical Code when using this machine:
 - 12 gauge wire - 75' of cord, including 25' of GFCI cord.
 - 14 gauge wire - 50' of cord, including 25' of GFCI cord.
- Cord sizes smaller than 12 gauge should not be used for 3/4 HP motors. Larger gauge cords can be run greater distances, but are not practical because of their size and weight.
- To protect your motor, observe the guidelines mentioned. If you have a run more than 75', use a generator to reduce your cord length from the power source to a working distance within these guidelines.

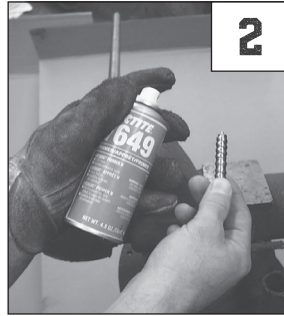
Overhead Power Lines

- When working outdoors, keep clear from overhead power lines in all directions.
- Check the location of power lines before using a ladder. Use approved ladders made of non-conductive material.
- Never place a ladder where it can slide into a power line.
- When carrying or moving a ladder or equipment, lower it to avoid touching a power line.
- Never assume that a wire is safe to touch.

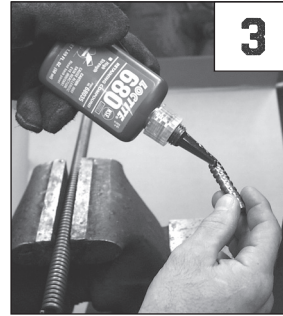
HOW TO SPLICE DURAFLEX® CABLE



1. Cut a few inches off of each cable end and remove any burrs with a grinding disk or file.



2. Spray Loctite Primer in and around the cable end and splice core to thoroughly remove grease and grime.



3. Apply Loctite Retaining Compound to splice core.



4. Insert splice core into cable one turn.



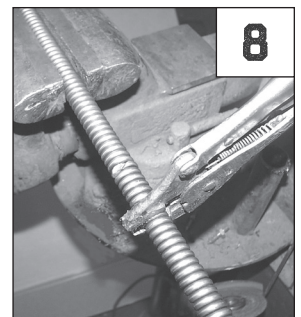
5. Apply Loctite Retaining Compound to other end of splice core.



6. Align other piece of cable onto splice core.



7. Place vise grips on free cable end and turn counterclockwise.

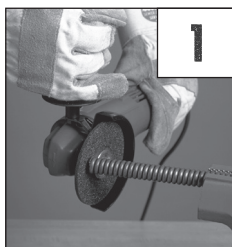


8. Continue turning and the cable ends will meet at the center of the splice core.

HOW TO BOND END FITTINGS TO DURAFLEX® CABLE

You can attach end fittings and splice cores to DuraFlex cable using a chemical bonding process, which means you can make quick cable repairs on the job—without welding. With Loctite Primer and Loctite Retaining Compound, you can quickly create a dependable bond that is as strong as a conventional weld. Please note that these products are not the same thread-locking compounds available in hardware stores and plumbing-supply houses, they are heavy-duty, permanent-bonding compounds made especially for jobs such as bonding cable fittings.

1. Cut the cable end and remove any burrs with a grinding disk or file.



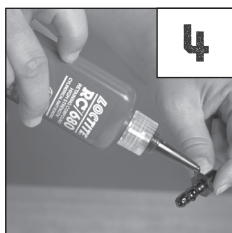
2. Spray Loctite Primer in and around the cable end to thoroughly remove grease and grime.



3. Spray Loctite Primer on the end fitting to thoroughly remove grease and grime.



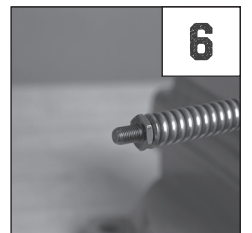
4. Apply Loctite Retaining Compound to the end fitting.



5. Using the wrench (part number EW), screw the fitting into the cable end until fitting is totally sealed.

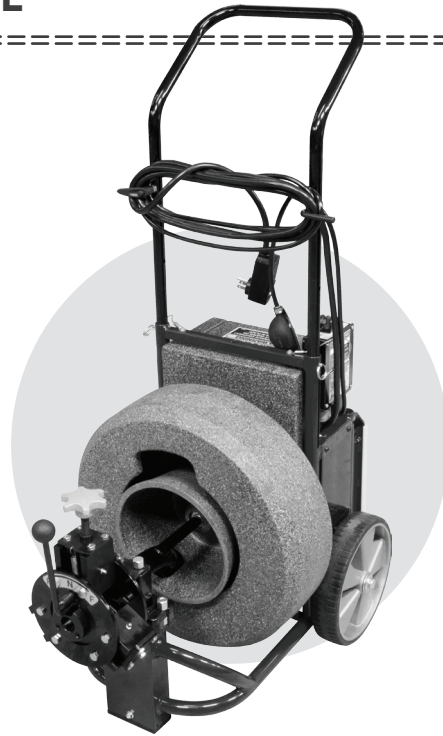


6. The Retaining Compound will be fully bonded to the cable in just a few minutes.



DM162 MACHINE MANUAL

★ BUILT **USA** TOUGH ★



DM162



DURACABLE[®]
— MANUFACTURING CO —

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WEST DES MOINES, IOWA 50265

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DM162MM
UPDATED JUNE 2017