

Foundry Ladles:
Molten Metal Handling Solutions





dependability. think**modern.**

Since the day our founder, Max Goldberg, designed the first molten metal handling device and started the Modern Pouring Device Company in 1919, we've served the foundry industry with equipment that's built to last. Modern Equipment Company has a solid history of designing, manufacturing and servicing foundry ladles and molten metal handling systems for our customers across the world. From Day 1 to today, our heritage has been to offer products that customers can count on, day after day, month after month, year after year. For dependable metal handling systems, **thinkmodern.**



Max Goldberg, Founder
1919



built to last.

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Covered, Tapered Ladles

No. 1 Type (Lever) Shanks

Series 1000 ladles, with number 1 lever shanks, are recommended for pouring small castings. When these ladles are used in combination with MODERN Pouring Devices a highly efficient, one-man operation is realized. When a crane hook eye is desired for use with chain hoist or crane, the crane hook eye must be specified.

The detachable bail construction quickly releases the ladle for relining and preheating. This detachable feature permits quick interchangeability with spare ladles.

Savings effected through the delivery of hotter metal quickly offset the additional investment in ladles of covered design. The rear stop prevents the ladle from tipping back when the cover is in open position. Covers, which help to deflect heat away from the operator, may be readily removed to facilitate lining of both covers and bowls.

Note: Covers are shipped complete with refractory lining fully installed. Shell lining is to be furnished and installed by the user.



Series 1000

Covered tapered ladle with No. 1 Lever Shank type shank and detachable bail.

Also available with raised fork shank handle.

Detailed Features

- Hook-type, detachable bail with lock and rear stop.
- Trunnion housings, with grease fittings, enclose the anti-friction bearings.
- Detachable, pull-back cover quickly removed for relining operations.
- Ladle lock securely holds the unit in up right position while in transit.
- All-welded construction insures maximum life in low-cost operation.
- Sizes starting at 11" and 100 lbs iron.
- Crane hook eye available.
- Lining forms available.

Open, Tapered Ladles

No. 1 Type (Lever) Shanks

Series 1010 open ladles are commonly used for pouring light and medium weight castings. Pouring lips on both sides permit right or left hand pouring. The action, with the No. 1 lever shank, is direct, fast and sensitive under the positive control of the operator.

A major advantage of the tapered ladle is the gaining of maximum clearance between the ladle and mold where molds are set up closely together. Also the tapered design facilitates easy removal of the lining.

The detachable bail construction quickly releases the ladle for relining and preheating. Also, this detachable feature permits quick interchange ability with spare ladles.

As an aid in deflecting heat away from the operator, a light-weight metal shield is fitted inside the bail frame. When a crane hook eye is required for use with a hoist or crane, this crane hook eye must be specified.



Series 1010

Open tapered ladle with No. 1 lever shank, roller bearing trunnions and detachable bail.

Detailed Features

- Hook-type, detachable bail.
- Furnished with plain or roller bearing trunnions.
- Ladle lock securely holds the unit in up-right position while in transit.
- All-welded construction insures maximum life and low-cost operation.
- Size starting at 11" and 100 lbs iron.
- Crane hook eye available.
- Lining forms available.

Modern Heavy-Duty Geared Ladles

Six powerful ladle gearings
for pouring service

For the tilting and pouring of metal loads that range beyond the free, easy control of the lever shanks there are MODERN, highly developed gearings.

All six sizes of gearing are secured to the hub of the worm wheel shaft and to the bail frame in a manner that causes all the gearing weight to be transmitted into the bail frame and up to the Pouring Device, crane or hoist. The ladle bowl and shank ring are effectively relieved of the gearing weight.

Trunnion housings, with their grease fittings, fully enclose the anti-friction bearings.

Gearings are fully enclosed in the gear housings.

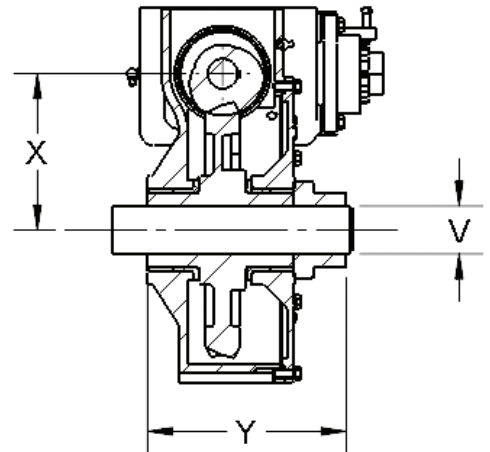
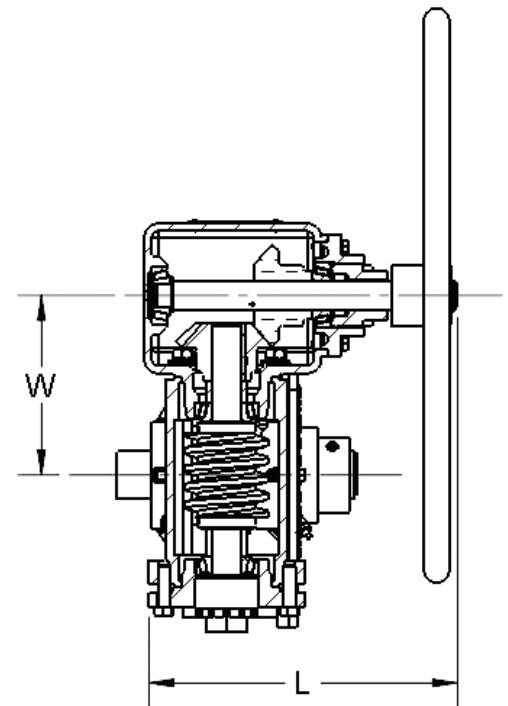
Various sizes of hand wheels are available to reduce hand-wheel forces required by the operator. Motor drives are available for all of our gearing sizes.

External, bearing-take-up plugs for back lash adjustment are common to all gearings except Model A.



Heavy-Duty Geared Ladles Dimensional Data

Type of Gearing	A	C	D	E	F	G
Standard Wheel Diameter, Inches	18	24	28	36	36	48
Torque Value, Inch-Pounds	1,633	3,585	11,034	15,774	22,280	56,526
L Over-All Length Gearing, Inches	10 7/8	12 5/8	18	19 1/2	21	21 1/2
V Trunion Stubs Diameter, Inches	1 5/8	2	2 3/16	2 15/16	3 1/2	4 3/4
W Center Line Trunion Center Line Handwheel Horizontal, Inches	5 3/4	7 1/2	9 1/4	10 1/4	11 3/4	16 1/4
X Center Line Trunion Center Line Handwheel Vertical, Inches	5	6 1/2	8	10	12 1/4	20 1/4
Y Length Through Gearing, Inches	7 1/4	9	11	13	13 1/2	15 1/2



Geared, Covered Tapered Ladles

Modern Series 1080 ladles with their worm and worm wheel gearings reduce the operator's work to a minimum.

Further increasing the highly efficient, high production capacity of the ladles described and illustrated here are MODERN, detachable, pull-back covers. The additional investment in ladles of covered design quickly is repaid by the improved quality of hotter metal poured.

Covers, which help to deflect heat away from the ladle operators, readily are detached to ease the task of lining both covers and ladle bowls.

Note: Covers are shipped fully lined. Shell lining is provided and installed by the user.

Tapered bowl design affords maximum clearance between ladle and mold where molds are set-up closely together. Also the entire lining is readily removed from a tapered bowl.

All-welded bowl construction eliminates all possible dead-weight while adding great strength.

Ladle-tilting torque is effectively transmitted from gearing to trunnion-stubs and shank ring to minimize bowl distortion and lengthens ladle life.



Series 1080

Geared, covered tapered ladle with square bail.

Detailed Features

- Trunnion housings fully enclose the anti-friction trunnion bearings.
- Gear housings are supported on both sides of the worm wheel, relieving the gearing of all weight bearings.
- Hand-wheel shaft operates on anti-friction bearings.
- Sizes starting at 15" and 300 lbs iron.
- Crane hook eye available.
- Lining forms available.

Straight sided ladle bowls are also available, offering slightly higher capacities over tapered designs without changing the overall dimensions of the ladle shell.

Geared, Open Tapered Ladles

These Series 1090 open ladles have double lips for pouring either left or right as mold and sprue locations may require. Worm and worm wheel gearings reduce the operator's work to a minimum. Various size hand wheels are available to meet conditions in varying foundry practice. Geared ladles maintain minute control over metal release and cut-off at the molds. Ladle-tilting torque is effectively transmitted from the gearing to trunnion stubs and shank ring to minimize bowl distortion and lengthen ladle life. Open ladles are typically furnished with a heat shield fixed to the underside of the bail to aid in deflecting heat away from the crane hook eye and hoist hook. Trunnion housings effectively guard the anti-friction bearings to guard against foundry dust, slag, and shot sparks.

Tapered Bowls afford maximum clearance between ladle and mold where molds are set-up closely together in congested areas.

Straight sided ladle bowls are also available, offering slightly higher capacities over tapered designs without changing the overall dimensions of the ladle shell.



Series 1090

Geared open tapered ladle with double pouring lips.

Detailed Features

- Trunnion housings fully enclose the anti-friction trunnion bearings.
- Gear housings are supported on both sides of the worm wheel, relieving the gearing of all weight bearing.
- Hand wheel shaft operates on anti-friction bearings.
- Sizes starting at 15" and 300lbs iron.
- Crane hook eye available.
- Lining forms available.

Geared, Open Straight-Sided Ladles

Quick Detachable Teapot Spouts

Modern Series 1160 ladles with teapot spouts are used most commonly by steel foundries to pour clean, hot metal through the lower opening of the spout while slag is held back. Applications are not restricted to either distributing or pouring. Teapot ladles are used for catching the metal then transferring and pouring directly into the molds.

In the quick-detachable design, shown at the right, the lower portion of the spout is fixed to the ladle. The remaining, upper portion of the spout is removable in sections. Removing a few bolts releases the spout sections for easy handling while lining is being repaired or renewed. Lining in the bowl is not distributed when spouts are re-lined.

The trunnions are fixed to the heavy shank ring which runs around the ladle shell and continues around the spout. At the ring section the spout is not removable.

Trunnion locations are engineered for correct balance to meet operating conditions. When ordering specify lining thickness to be used.

Sizes starting at 26" and 2,000 lbs iron.



Series 1160

Geared, teapot ladle with quick-detachable spout.

Detailed Features

- Lining forms available.

Geared Precision Bottom Pour Ladles

Modern Series 1170 bottom pour ladles provide slag-free metal and are applicable for pouring both light and heavy work.

Design of the bottom-pours rectangular slide mechanism insures positive control over the flow of metal. With a housing enclosing the machined rack and pinion, all moving parts are protected from foundry dirt, slag and sparks which tend to gum up ordinary open slides. The entire assembly remains clean. Manual fixtures, incorporated in the design, lock both the gooseneck and stop-per rod in their accurate adjusted position. The entire mechanism is hinge mounted to the ladle bowl to permit easy adjustment of the stopper rod in its vertical alignment.

Slides can be furnished to release metal when the lever is either raised or depressed. The dual motion of the lever applies whether lever is mounted to the right or the left of the ladle centerline. The broad flexibility in control over metal flow meets a wide range of conditions in varying foundry practices.

Disengagement of the bottom pour unit for maintenance purposes is easily accomplished by removing the hinge pin.

Ladle bowls are well vented on the sides and bottom, to insure fast, safe drying of the linings.

Trunnion locations of geared, bottom pour ladles are engineered for correct balance. When ordering, specify linings to be used.



Series 1170

Geared, precision bottom-pour ladle.

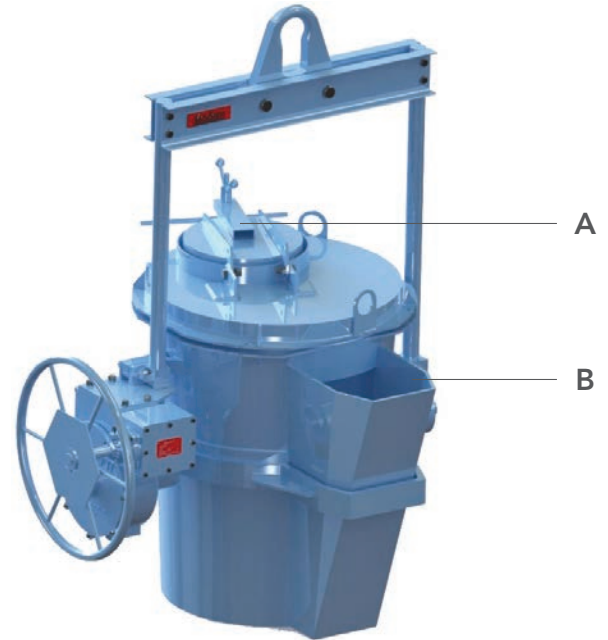
Detailed Features

- Sizes starting at 26" and 1,200 lbs steel.
- Lining forms available.

Little Escapes Our Mod-Tundish Ladle

The most efficient, economical pour-over inoculation system developed

The Mod-Tundish® Ductile Iron Treatment Ladle is industry proven to minimize heat loss, provide uniform treatment, and minimize magnesium fuming with maximum recovery. A full outside teapot spout permits receiving, faster pour-out, and minimizes tramp inclusions in treated metal. Also, it's ideal as a distribution ladle - minimizing temperature loss.



Series 1189

Geared ductile iron treatment ladle.

A Hinged alloy cover.

B Teapot pouring/receiving spout.

Detailed Features

- Maximum recovery.
- Minimum escape of magnesium fumes.

Mod-Tundish Ladle Dimensional Data

Series 1189

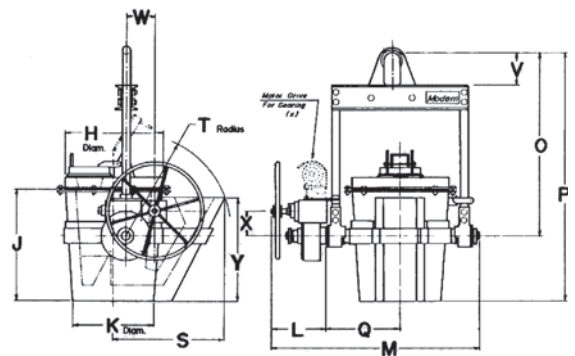
Gear	CAP	Side Lining	Bottom Lining	Free Top Space
A	500	2 1/2	4	14
C	1000	2 1/2	4	14
C	1500	2 1/2	4	14
D	2000	2 1/2	4	14
E	2500	3	5	14
E	3000	4	5	18
E	3500	4	5	18
E	4000	4	5	18
E	4500	4	5	18
F	5000	4	6	18
F	5500	4	6	18
F	6000	4	6	18
F	6500	4	6	18
F	7000	4	6	18
F	7500	4	6	18
G	8000	4 1/2	7	20

Enclosed Ductile Iron Treatment Ladle

Dimensions as listed are approximate and may vary with application.

All-steel fabricated sectionalized lining forms are available for Mod-Tundish® ladles.

This treatment ladle is manufactured under U.S. Patent No. 4,509,979



CAP	H	J	K	L	M	O	P	Q	S	T	V	W	X	Y
500	24	31	20 1/2	10 7/8	47 1/2	50	68 1/2	17 1/2	27	28 1/2	5 1/2	5 3/4	5	27 1/2
1000	28 1/2	33	25	12 5/8	55 1/4	56	76	20 5/8	29	28 1/2	8	7 1/2	6 1/2	30 5/8
1500	29	39	24	18	60 3/4	60	82 1/2	20 3/4	30 1/2	33	8	9 1/4	8	36
2000	32 1/2	40	28	18	64 3/4	62	84 1/4	22 3/4	32	33 1/2	8	9 1/4	8	38 1/4
2500	34	43 1/2	29	19 1/2	70 5/8	66	90 1/4	24 5/8	33 1/2	37	8	10 1/4	10	40 1/4
3000	36 1/2	48 1/4	31	19 1/2	74	73	97 1/2	26 1/4	35	39	11	10 1/4	10	45
3500	38	50	33	19 1/2	75 1/2	75	100	27	39	44	11	10 1/4	10	47
4000	39 1/2	52	34	19 1/2	76	76	102	27 1/2	41	45 1/2	11	10 1/4	10	49
4500	39 1/2	55	34	19 1/2	76	78	106	27 1/2	42 1/2	46 3/4	11	10 1/4	10	52
5000	42	55	36	21	81	80	108	29	45	49	15	11 3/4	12 1/4	52
5500	43	55 1/2	37	21	83	81	109 1/2	30	46	50	15	11 3/4	12 1/4	52 1/2
6000	44 1/2	56 1/2	38	21	84	82	113	30 1/2	46	51	15	11 3/4	12 1/4	53 1/2
6500	45 1/2	57	39 1/2	21	85 1/2	83	113 1/2	31 1/8	48	53	15	11 3/4	12 1/4	54
7000	46 1/2	58	40	21	86 1/2	83	114	31 3/4	49	54	15	11 3/4	12 1/4	55
7500	47 1/2	58 1/2	40 1/2	21	87 1/2	83 1/2	114 1/2	32 1/4	50	55 1/2	15	11 3/4	12 1/4	55 1/2
8000	49	63	42	19 1/2	89 1/2	93	125	34	52	58 1/2	20	16 1/4	20 1/4	60

Gearing and Ladle Parts

Are you ready to take control of your hot metal handling equipment? With economy on the rise, furnaces are kicking into high gear with more molten volume. It is time to evaluate your parts needs to keep your new and existing ladle equipment working properly. Modern Equipment Company is ready to help with all equipment and spare parts.

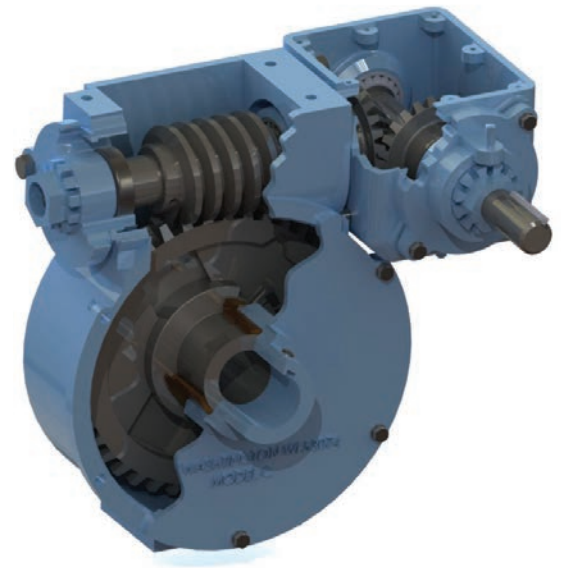
Most gearing parts and bearings are in stock allowing fast order turnaround. Need a recommended parts list for your ladle models? Contact us at LadleParts@ModernEQ.com.

The following information will help us determine the exact parts required for your ladle:

1. Gearing serial number
2. Ladle assembly number
3. Your purchase order number

Fast Delivery Service

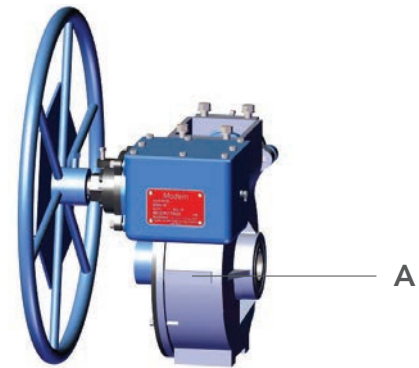
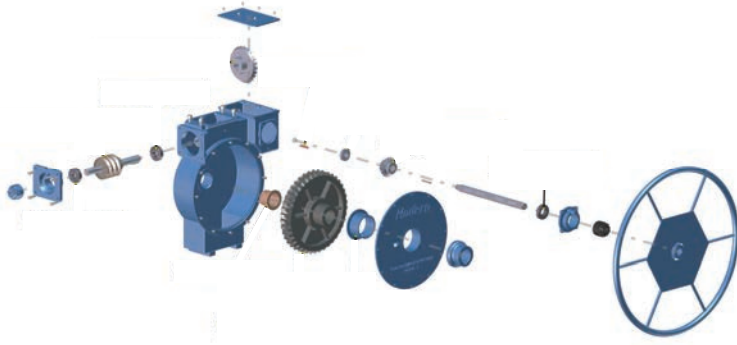
Take some time out of your busy schedule, see what your needs are, give us a call at (262) 284-9431 and say "Hey Modern, I need ladle parts!"



How to order ladle parts

Visit moderneq.com/parts.html for a full list of replacement parts for each gearing model.

For more information and pricing call parts sales, (262) 284-9431 or email LadleParts@Moderneq.com.



A Serial number location.

How to request a quote for ladle assembly

Modern Equipment has been at the forefront for customized ladle solutions since day one. We can build a ladle to suit your particular application. Custom built ladles for pre-cast liners are manufactured routinely. Custom spouts, gearings, and configurations are our specialty.

Please call ladle sales, (262) 284-9431 or email Ladles@Moderneq.com with the following information if possible:

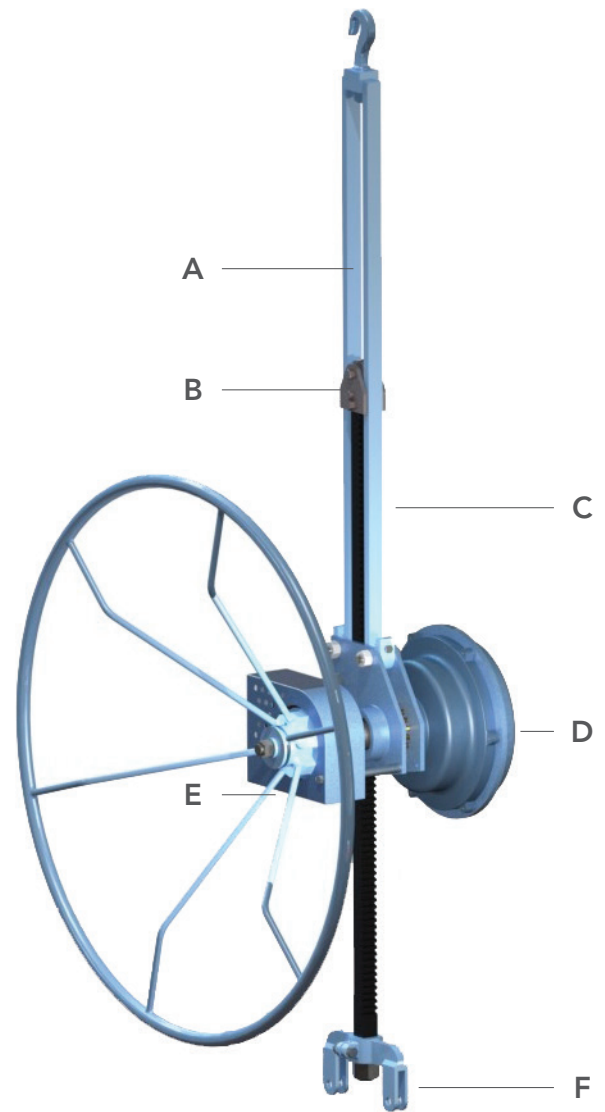
- Contact and company information
- Style and ladle desired
- Capacity and type of molten metal
- Desired thickness of your lining
(we do not supply the lining, but need this information to properly balance the ladle for pouring)
- Manual gearing or motor drive
- Maximum capacity of the existing overhead monorail and/or hoist

Pouring Devices With Hand- Wheel Control

Handling hot-metal loads that extend beyond the range of hand-shank pouring demands the efficiency of MODERN geared Pouring Devices.

The large hand-wheel and efficient planetary gear system, relieves the pour-off-men of much back-breaking work. Geared lifting of the molten metal affords maximum safety, too. A Weston type brake holds the ladle at any desired height. Turning the handwheel in a clockwise direction raises the load. Turning counter-clockwise quickly inches the load to its accurate lowered position over the sprue. Each machine is thoroughly factory tested. Moving parts are effectively guarded against the damaging effects of dust, shot and heat.

In every detail there's nothing better than a MODERN geared Pouring Device. It's the original in the field! The two most popular models shown on the following page are widely accepted as the standard throughout the foundry industry.



Series 5560 & 5570

Model "F" and "FA" Pouring Devices in all sizes are built in this same, sturdy design.

- A** Steel side-arms lend maximum rigidity between trolley hook and ladle.
- B** Rack is guided by machine-turned rollers which operate on bronze bushings.
- C** Rigidity imparted by the side-arms is carried to the ladle bail through the steel cut-tooth machined rack.
- D** Planetary, cut-tooth gearing operates in an oil tight gear housing.
- E** A Weston type brake securely holds the load in rigid position while pouring device and metal are in transit.
- F** Bolted yoke for fixed bail attachment.

Model "F" Pouring Device

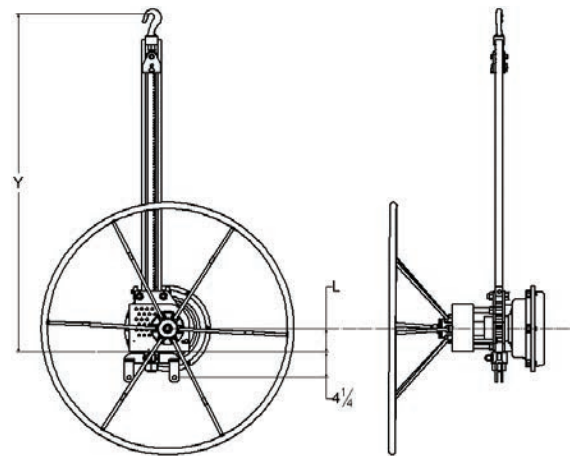
Series 5560 MODERN Model "F," geared Pouring Devices are good general purpose machines for pouring molds. Gross loads totaling 650 pounds are transported with minimum effort.

The severe working conditions of foundry operation were taken into account in the design of the Model "F" and "FA." Planetary cut-tooth gearing operates in an oil-tight gear case. Weston type load brake and steel ladle lock guard the safety of the operator. The range of lifting heights is shown in the specifications listed on this page. The "F" and "FA" devices are available with either the bolted clevis or hook yoke.

Code no.	Model	Lift	Max Gross Load lbs.	Y	L
5560-5023-3	F	2'- 0"	650	3'-7 1/2"	2 5/8"
5560-5029-3	F	2'- 6"	650	4'-1 1/2"	2 5/8"
5560-5033-3	F	3'- 0"	650	4'-7 1/2"	2 5/8"
5560-5039-3	F	3'- 6"	650	5'-1 1/2"	2 5/8"

Code no.	Std. Wheel Dia.	Lift Ins. Per Rev. Wheel	Approx. Shpg. Wt. Lbs.
5560-5023-3	F	2'- 0"	650
5560-5029-3	F	2'- 6"	650
5560-5033-3	F	3'- 0"	650
5560-5039-3	F	3'- 6"	650

Dimension "Y" may be reduced 6", and still maintain the same lift by ordering Model F-5560, special low-head design. Special Device does not include swivel top-hook. Trolley with swivel eye must be used.



Model "FA" Pouring Device

The Series 5570 "FA" Pouring Device is the heavy duty manually operated unit. It is designed to handle gross loads of 1500 pounds. In addition to its popular application for pouring floor-molds the model "FA" is widely used over monorail systems for disturbing metal to the smaller pouring ladles:

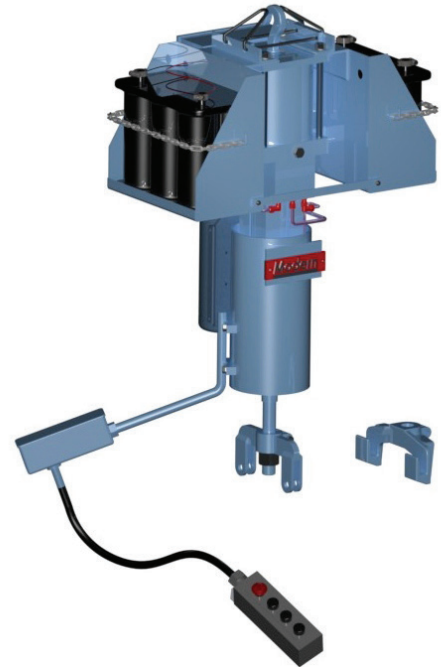
Code no.	Model	Lift	Max Gross Load lbs.	Y	L	Std. Wheel Dia.	Lift Ins. Per Rev. Wheel	Shpg. Approx. Wt. Lbs.
5570-5023-3	FA	2'- 0"	1500	3'-8 1/16"	4"	24"	1 1/4"	215
5570-5029-3	FA	2'- 6"	1500	4'-2 1/16"	4"	24"	1 1/4"	215
5570-5033-3	FA	3'- 0"	1500	4'-8 1/16"	4"	24"	1 1/4"	215
5570-5039-3	FA	3'- 6"	1500	5'-2 1/16"	4"	24"	1 1/4"	215

Dimension "Y" may be reduced 6 1/4", in all cases by ordering Model FA-5600, special, low-headed design. Special Device does not include swivel top-hook. Trolley with swivel eye must be used.

Fluid Powered Pouring Device

Let hydraulics help the pouring

The Series 5705 "HDC" Hydraulic Pouring Device transports molten metal in a ladle from the melter to the molds, on or off synchronized conveyor lines or pallets. The pouring device traverses by trolley on a monorail or crane and lifts and lowers hydraulically with electric push button control.



Series 5705

Optional equipment: Battery charger
24 VDC operates on 115 VAC input.

Features

1. Pushbutton control, coil-cord mounted
2. Full-length hydraulic lift travel
3. Self-contained battery power pack
4. Plug-in auto-recharger
5. Heavy-duty batteries
6. Control mode
7. Safety top hook
8. Simple, compact design

Advantages

- For fingertip-easy and smooth hydraulic lifting of ladle loads up to 3,000 lbs., at speeds up to 7 fpm.
- Tailored to your specifications, up to 48".
- Eliminates costly pick up lines.
- For optimum battery charging convenience.
- Deliver up to 16 hours of full-lift cycles at the rate of one lift cycle every six minutes.
- Power up, power down, normal down via gravity (for minimum energy consumption). Power down for ladle detachment.
- Large hook with heavy cross-section for maximum security to trolley.
- A minimum of operating parts for reduced maintenance.

Ladle & Gearing Rebuild Program

Modern provides services to recondition existing gearings as well as complete ladle assemblies

Program Benefits

- Savings of up to 50% when compared to new
- Extend the life of your equipment
- Gear Boxes rebuilt using only OEM certified parts
- No waiting for parts for reassembly
- Fast turnaround
- 90 day warranty on repaired items

Inspection/Rebuild Program Qualifications

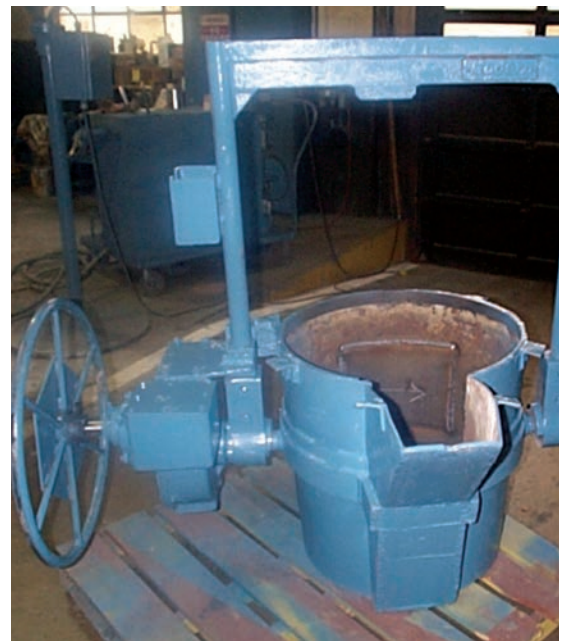
For a nominal fee, Modern will visually inspect the gearbox and/or ladle assembly to determine the parts needing replacement. A proposal will be sent to the customer for the recommended repairs.

All Standard Manual Modern Gear Boxes sizes "A" – "F" apply. Any broken castings, worm gears, or bent handwheel shafts will be additional cost.

For information and pricing call ladle sales (262) 284-9431 or email LadleParts@Moderneq.com



Before Rebuild



After Rebuild

thinkmodern

A system-wide approach to your business.

Modern Equipment Company's name is synonymous with high quality products and innovations that have made manufacturers and metal casters more efficient and competitive in the global marketplace. Though we are primarily engaged in the foundry and diecasting business, we are also well respected for our gas generation systems. Additionally, we fabricate private label, custom machinery for some of the world's most formidable brands. Contact us today to learn more about our innovative solutions including our Jet Melter® furnace, inert gas generators, foundry ladles, and contract manufacturing services.

Modern
Equipment Company

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Engineered and
Manufactured in
the U.S.A.

