

NWSL SPECIAL PARTS

for creative craftsmen model builders

METRIC DRILLS, HAND TAPS, REAMERS, DIES

METRIC HSS DRILLS

Size	Part #	Price
0.8mm	2080-5	\$6.95
0.9mm	2090-5	\$3.95
1.0mm	2100-5	\$4.95
1.1mm	2110-5	\$6.95
1.2mm	2120-5	\$3.95
1.3mm	2130-5	\$4.95
1.4mm	2140-5	\$4.95
1.5mm	2150-5	\$4.95
1.6mm	2160-5	\$4.95
1.7mm	2170-5	\$6.95
1.8mm	2180-5	\$6.95
1.9mm	2190-5	\$4.95
2.0mm	2200-5	\$3.95
2.1mm	2210-5	\$3.95
2.2mm	2220-5	\$4.95
2.3mm	2230-5	\$3.95
2.4mm	2240-5	\$4.95
2.5mm	2250-5	\$4.95
2.6mm	2260-5	\$3.95
2.7mm	2270-5	\$3.95
2.8mm	2280-5	\$6.95
2.9mm	2290-5	\$4.95
3.0mm	2300-5	\$3.95
3.2mm	2320-5	\$4.95
4.0mm	2400-5	\$7.95
5.0mm	2500-5	\$3.95
5.8mm	2580-5	\$3.95
6.0mm	2600-5	\$3.95

HAND TAPS

Size	Part #	Price
1/16-60W	3000-5	\$14.75
1.0mm	3010-5	\$12.95
1.2mm	3012-5	\$12.95
1.4mm	3014-5	\$12.95
1.7mm	3017-5	\$12.95
2.0mm	3020-5	\$12.95
2.6mm	3026-5	\$12.95
3.0mm	3030-5	\$12.95

HAND TAP & DRILL SETS

Size	Part #	Price
1/16-60W	3050-5	\$18.75
1.0 x 0.25mm	3060-5	\$22.95
1.2 x 0.25mm	3062-5	\$16.95
1.4 x 0.30mm	3064-5	\$18.95
1.7 x 0.35mm	3067-5	\$18.95
2.0 x 0.40mm	3070-5	\$14.25
2.6 x 0.45mm	3076-5	\$14.25
3.0 x 0.50mm	3080-5	\$14.25

HAND REAMERS

Size	Part #	Price
1.5mm	3215-5	\$32.95
2.0mm	3220-5	\$23.95
2.4mm	3224-5	\$32.95
3.0mm	3230-5	\$23.95
4.0mm	3240-5	\$23.95
5.0mm	3250-5	\$23.95
5.8mm	3258-5	\$23.95
6.0mm	3260-5	\$23.95

ROUND DIES

Size	Part #	Price
1/16-60W	3100-5	\$46.50
1.0 x 0.25mm	3110-5	\$37.95
1.2 x 0.25mm	3112-5	\$37.95
1.4 x 0.30mm	3114-5	\$36.95
1.7 x 0.35mm	3117-5	\$34.50
2.0 x 0.40mm	3120-5	\$34.50
2.6 x 0.45mm	3126-5	\$36.95
3.0 x 0.50mm	3130-5	\$36.95

THRUST WASHER (Thrust Bearing)

A shim washer is used to fill excess space between two parts, usually thin so that several can be used as necessary to fit the parts properly. In the case of running parts, such as a thrust washer application, proper fitting requires some space (usually about .005") to avoid restricting mechanical operation. Excess space (or 'slop') usually causes poor operation and early mechanical failure.

A washer used as a bearing to withstand and contain end thrust such as the worm end-thrust in a wormgear gearbox. Should be of good mechanical strength and good bearing qualities. NWSL bronze thrust washers meet both these requirements. Can also be used as SHIM WASHERS both in mechanical operating situations such as removing excess end play of a wormshaft or in non-mechanical requirements. NWSL bronze thrust washer ID and OD dimensions are approximately .003" oversize and undersize respectively to provide a running fit to shafts and bores of the specified dimensions.

WASHER, Bronze

ID	OD	Thick	Fits	Pkg/8 \$1.29	Pkg/100 \$7.50
3/32"	3/16"	.005"	2.4mm	100-4	1100-4
3/32"	3/16"	.010"	2.4mm	103-4	1103-4
1/8"	3/16"	.010"	3.0mm	106-4	1106-4
2mm(.079")	3mm (.118")	.010"		108-4	1108-4
2mm(.079")	3/16"(.187")	.010"		109-4	1109-4
1/16"	3mm(.118")	.010"	2.4mm	110-4	1110-4
1/16"	3mm	.004"		111-4	1111-4
3/32"	1/4"	.016"	2.4mm	114-4	1114-4
4mm	7mm	.010"		116-4	1116-4
5mm	8mm	.010"		117-4	1117-4
6mm	9mm	.010"		118-4	1118-4
2mm	4.2mm	.015"		119-4	1119-4

WASHER, Nylon, Fiber

	Pkg/5 \$1.29	Pkg/50 \$7.50
Nylon .064" x .120" x .020" (fits 1.5mm shaft)	112-4	1112-4
Fiber .099" x .220" x .015"	113-4	1113-4

Prices subject to change without notice.

INSULATING & BLACK PLATED SCREWS & NUTS

INSULATING SCREWS	<i>Qty (4)</i>		<i>Qty (100)</i>	
00-90x1/2" NYLON PANhead	4116-5	\$0.95	14116-5	\$17.95
0-80x1/2" NYLON PANhead	4126-5	0.95	14126-5	\$14.95
1-72x1/2" NYLON PAN head	4136-5	0.95	14136-5	\$14.95
2-56x1/2" NYLON PAN head	4147-5	0.95	14147-5	\$14.95
0-80x1/8" NYLON Fillister Head	4174-5	0.95	14174-5	\$14.95
0-80x1/2" NYLON Fillister Head	4176-5	0.95	14176-5	\$14.95
1-72x7/16"NYLON FLAT head	4236-5	0.95	14236-5	\$14.95
2-56x3/8"NYLON FLAT head	4245-5	0.95	14245-5	\$14.95
2.0x5mm x 0.4 clear Plastic Cross PAN head	5205-5	0.95	15205-5	\$14.95
BLACK PLATED METRIC SCREW	<i>Qty (8)</i>		<i>Qty (100)</i>	
1.4x2mmx0.3 PAN head	21142-5	\$0.95	31142-5	\$8.50
1.4x3mmx0.3 PAN head	21143-5	0.95	31143-5	\$8.50
1.4x4mmx0.3 PAN head	21144-5	0.95	31144-5	\$8.50
1.4x5mmx0.3 PAN head	21145-5	0.95	31145-5	\$8.50
1.4x6mmx0.3 PAN head	21146-5	0.95	31146-5	\$8.50
1.4x8mmx0.3 PAN head	21148-5	0.95	31148-5	\$8.50
1.7x2.5mmx0.35 PAN head	21172-5	0.95	31172-5	\$8.50
1.7x4mmx0.35 PAN head	21174-5	0.95	31174-5	\$8.50
2.0x3mm x 0.4 PAN head	21202-5	0.95	31202-5	\$8.50
2.0x3mm x 0.4 FLAT head	21203-5	0.95	31203-5	\$8.50
2.0x4mmx0.4 PAN head	21204-5	0.95	31204-5	\$8.50
2.0x5mmx0.4 PAN head	21205-5	0.95	31205-5	\$8.50
2.0x6mmx0.4 PAN head	21206-5	0.95	31206-5	\$8.50
2.0x8mmx0.4 PAN head	21208-5	0.95	31208-5	\$8.50
2.0x10mmx0.4 PAN head	21210-5	0.95	31210-5	\$8.50
2.6x8mmx0.45 PAN head	21268-5	0.95	31268-5	\$8.50
METRIC SET SCREWS	<i>Qty (6)</i>		<i>Qty (100)</i>	
1.7 x 2mm x 0.35 Set Screw , steel	1672-5	0.95	11672-5	\$14.00
1.7 x 2mm x 0.35 set screw , black plated	21672-5	0.95	31672-5	\$14.00
1.4 x 1.5mm x 0.3 socket set screw cup	21641-5	0.95	31641-5	\$14.00
Hex key .028" (.7mm) fits #21641-5 set screw	21640-5	0.95	n/a	
2.0 x 4mm set screw , black	21684-5	1.95	n/a	
2.0 x 3mm x 0.4 N/P set screw	1683-5	0.95	11683-5	\$14.00
6-32 x 1/8 set screw	21690-5	1.95	n/a	
M 3.0 x 0.5 set screw	21692-5	1.95	na/	
METRIC Nickel Plated HEX NUTS	<i>Qty (6)</i>		<i>Qty (100)</i>	
1.0mm x 0.25	1010-5	\$1.49	11010-5	\$10.50
1.2mm x 0.25	1012-5	1.29	11012-5	\$10.50
1.4mm x 0.30	1014-5	1.29	11014-5	\$10.50
1.7mm x 0.35	1017-5	1.29	11017-5	\$10.50
2.0mm x 0.40	1020-5	1.29	11020-5	\$10.50
2.6mm x 0.45	1026-5	1.29	11026-5	\$10.50
3.0mm x 0.50	1030-5	1.29	11030-5	\$10.50

SCREW & WASHER ASSORTMENT PACKS

THRUST WASHER ASST

Bronze thrust and spacer washers

Pt# Price
6000-5 \$17.95

METRIC SCREW ASST by thread size

1.0mm and 1.2mm metric fasteners	6100-5	10.95
1.4mm metric fasteners	6140-5	15.95
1.7mm metric fasteners	6170-5	10.95
2.0mm metric fasteners	6200-5	17.95
2.6mm and 3.0mm metric fasteners	6300-5	15.95

Prices subject to change without notice.

NICKEL PLATED SCREWS

METRIC NICKEL PLATED SCREWS	<i>Qty (8)</i>		<i>Qty (100)</i>	
1.0x3mm x 0.25 CROSS PAN head	1103-5	\$0.95	11103-5	\$10.50
1.0x4mm x 0.25 CROSS PAN head	1104-5	0.95	11104-5	\$10.50
1.0x5mm x 0.25 CROSS PAN head	1105-5	0.95	11105-5	\$10.50
1.0x7mm x 0.25 CROSS PAN head	1107-5	0.95	11107-5	\$10.50
1.2x3mm x 0.25 CROSS PAN head	1123-5	0.95	11123-5	\$10.50
1.2x4mm x 0.25 CROSS PAN head	1124-5	0.95	11124-5	\$10.50
1.2x5mm x 0.25 CROSS PAN head	1125-5	0.95	11125-5	\$10.50
1.4x2.0mm x 0.3 CROSS PAN head	1142-5	0.95	11142-5	\$8.50
1.4x2.4mm x 0.3 CROSS PAN head	1162-5	0.95	11162-5	\$8.50
1.4x3mm x 0.3 CROSS PAN head	1143-5	0.95	11143-5	\$8.50
1.4x4mm x 0.3 CROSS PAN head	1144-5	0.95	11144-5	\$8.50
1.4x6mm x 0.3 CROSS PAN head	1146-5	0.95	11146-5	\$8.50
1.4x10mm x 0.3 CROSS PAN head	1150-5	0.95	11150-5	\$8.50
1.4x3mm x 0.3 CROSS FLAT head	1153-5	0.95	11153-5	\$8.50
1.4x4mm x 0.3 CROSS FLAT head	1154-5	0.95	11154-5	\$8.50
1.4x6mm x 0.3 CROSS FLAT head	1156-5	0.95	11156-5	\$8.50
1.4x16mm x 0.3 CROSS FLAT head	1152-5	0.95	11152-5	\$8.50
1.7x2mm x 0.35 CROSS PAN head	1172-5	0.95	11172-5	\$8.50
1.7x5mm x 0.35 CROSS PAN head	1175-5	0.95	11175-5	\$8.50
1.7x6mm x 0.35 CROSS PAN head	1177-5	0.95	11177-5	\$8.50
1.7x18mm x 0.35 CROSS PAN head	1188-5	0.95	11188-5	\$8.50
1.7x16mm x 0.35 CROSS FLAT head	1199-5	0.95	11199-5	\$7.50
2.0x3mm x 0.4 CROSS PAN head	1203-5	0.95	11203-5	\$7.50
2.0x4mm x 0.4 CROSS PAN head	1204-5	0.95	11204-5	\$7.50
2.0x5mm x 0.4 CROSS FLAT head	1205-5	0.95	11205-5	\$7.50
2.0x6mm x 0.4 CROSS PAN head	1206-5	0.95	11206-5	\$7.50
2.0x8mm x 0.4 CROSS PAN head	1208-5	0.95	11208-5	\$7.50
2.0x10mm x 0.4 CROSS PAN head	1210-5	0.95	11210-5	\$10.50
2.0x11mm x 0.4 CROSS PAN head	1211-5	0.95	11211-5	\$10.50
2.0x12mm x 0.4 CROSS PAN head	1212-5	0.95	11212-5	\$10.50
2.0x5mm x 0.4 CROSS FLAT head	1225-5	0.95	11225-5	\$8.50
2.0x6mm x 0.4 CROSS FLAT head	1226-5	0.95	11226-5	\$8.50
2.0x11mm x 0.4 CROSS FLAT head	1209-5	0.95	11209-5	\$10.50
2.0x18mm x 0.4 CROSS FLAT head	1229-5	0.95	11229-5	\$10.50
2.0x20mm x 0.4 CROSS FLAT head	1220-5	0.95	11220-5	\$10.50
2.6x3mm x 0.45 CROSS PAN head	1263-5	0.95	11263-5	\$8.50
2.6x4mm x 0.45 CROSS PAN head	1264-5	0.95	11264-5	\$8.50
2.6x5mm x 0.45 CROSS PAN head	1265-5	0.95	11265-5	\$8.50
2.6x6mm x 0.45 CROSS PAN head	1266-5	0.95	11266-5	\$8.50
2.6x8mm x 0.45 CROSS PAN head	1268-5	0.95	11268-5	\$8.50
2.6x10mm x 0.45 CROSS PAN head	1270-5	0.95	11270-5	\$8.50
2.6x12mm x 0.45 CROSS PAN head	1272-5	0.95	11272-5	\$8.50
2.6x5mm x 0.45 CROSS FLAT head	1275-5	0.95	11275-5	\$8.50
3.0x5mm x 0.5 CROSS PAN head	1305-5	0.95	11305-5	\$8.50
3.0x10mm x 0.5 CROSS PAN head	1310-5	0.95	11310-5	\$8.50
2.0x6mm x 0.4 CROSS sheet metal	1806-5	0.95	11806-5	\$8.50

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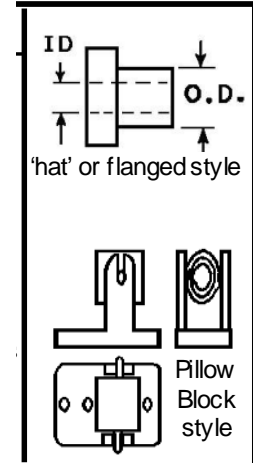
BEARINGS

A bearing is used to support a moving part in a desired location, i.e. holding a shaft or axle in desired alignment. A bearing should be a secure yet not tight fit to the shaft. A loose bearing allows the shaft to vibrate (a major cause of mechanism noise) and fails to keep mechanism parts in proper alignment. This misalignment or sloppiness usually causes further, and rapidly accelerating, mechanism wear and early failure. Proper lubrication of any bearing will prolong its life, but cannot alleviate mechanical problems described above.

The exterior shape of the bearing is designed for the particular mounting method - a ball shape permits the bearing to be self-aligning (assuming the holder is not too tight); a hat, or flanged, shape fits a pre-drilled hole in the holder and can be press-fit, soldered or bonded in place if necessary but is harder to align. The flange can serve as a thrust bearing surface.

Brass bearings are suitable for low speed shafts such as model axles. Bronze bearings are preferable for high speed shafts such as motor shafts, etc. and for generally longer mechanism operating life. Some plastics are suitable for bearing applications, particularly Nylon and Acetal (usually referred to as 'Delrin', the registered name of DuPont for this plastic). While it is commonly stated that these plastics are 'self-lubricating', lubrication with a plastic compatible lubricant can improve operation and increase bearing life by a factor of 10.

Part #	Type	ID	OD	Overall Length	Flange OD	Flange Depth	Material	Qty/pkg	Price	Used in
365-6	Ball-Brg	.125"	5/16"	.108"				2	\$9.95	
368-6	Ball-Brg	.125"	5/16"	.140"				2	\$9.95	
373-6	Ball-Brg	2.0mm	6.0mm	.095"				2	\$9.95	
369-6	Ball-Brg	3/32"	3/16"	1/16"				2	\$9.95	DISCONTINUED
398-6	D-shape	3/32"	.150"	.120"	.178"	.028"	Bronze	2	\$2.95	
364-6	Flange	1.2mm	3.9mm	.173"	.180"	.042"	Bronze	2	\$2.95	
374-6	Flange	1.2mm	2.5mm	.173"	.180"	.042"	Bronze	2	\$2.95	175-6
357-6	Flange	1.5mm	4mm	.079"	.210"	.020"	Bronze	2	\$2.95	
360-6	Flange	1.5mm	3.9mm	.173"	.180"	.042"	Bronze	2	\$2.95	
363-6	Flange	1.5mm	2.5mm	.070"	.126"	.011"	Bronze	2	\$2.95	
366-6	Flange	1.6mm	.080"	.122"	.112"	.011"	Brass	12	\$1.95	DISCONTINUED
351-6	Flange	2.0mm	5.0mm	.117"	.250"	.025"	brass	2	\$2.95	
359-6	Flange	2.0mm	3.9mm	.171"	.177"	.040"	Bronze	2	\$2.95	
391-6	Flange	2.0mm	.125"	.115"				2	\$2.95	2566-6
392-6	Flange	2.0mm		4.0mm			Bronze	2	\$2.95	2592/95-6
	Flange	2.0mm	.199"	.300"	.250"	.025"	brass	2		2626-6
350-6	Flange	2.35mm	.124"	.105"	.191"	.013"	brass	2	\$2.95	
358-6	Flange	2.4mm	3.9mm	.173"	.180"	.040"	Bronze	2	\$2.95	
375-6	Flange	2.4mm	3/16"	.316"	.250"	.125"	Bronze	2	\$2.95	
354-6	Flange	3/32"	1/8"	.108"	.187"	.013"	Brass	8	\$6.95	
361-6	Flange	1/8"	3/16"	.299"	.250"	.111"	Bronze	2	\$2.95	
362-6	Flange	1/8"	4mm	.186"	.253"	.016"	Brass	8	\$6.95	
381-6	Flange	1/8"	.300"				Bronze	2	\$6.95	
383-6	Flange	1/8"	.187"	.292"	.250"	.100"	brass	2	\$2.95	
395-6	Flange	1/8"	.315"	.165"				2	\$2.95	2711/14-6
367-6	Flange	1/8"	3/16"	.319"	.250"	.130"	Bronze	2	\$2.95	
396-6	Flange	3/16"	.280"	.256"	.344"	.166"	Bronze	2	\$2.95	2519-6
397-6	Flange	3/16"	.280"	.154"	.343"	.066"	Bronze	2	\$2.95	2520-6
1540-6	Flange	4.6mm	.280"	.135"	.380"	.047"	brass	2	\$3.95	
1542-6	Flange	5.0mm	.280"	.140"	.380"	.047"	brass	2	\$3.95	
1543-6	Flange	5.8mm	.280"	.135"	.313"	.042"	brass	2	\$3.95	
1544-6	Flange	6.0mm	.280"	.135"	.380"	.047"	brass	2	\$3.95	
1541-6	Flange	6.35mm	.280"	.135"	.380"	.047"	brass	2	\$3.95	
355-6	Flange	9/64"	4mm	.140"	.197"	.018"	Brass	8	\$6.95	
382-6	Flange	4.5mm	6.25mm	4.95mm			Bronze	2	\$4.95	
370-6	Pillow, self align	2.4mm			n/a	n/a	plastic/brz	1	\$5.95	
372-6	Pillow, self align	2.0mm			n/a	n/a	plastic/brz	1	\$5.95	
376-6	Pillow, self align	1.5mm			n/a	n/a	plastic/brz	1	\$5.95	
380-6	Spherical	3/32"	.230"	.153"	n/a	n/a	Bronze	2	\$4.95	
394-6	Square	3/32"	.165"		n/a	n/a	Bronze	2	\$2.95	2688/91-6
379-6	Square	1/8"	.250"	.095"	n/a	n/a	Bronze	2	\$2.95	
390-6	Square	1/8"	.236"		n/a	n/a	Bronze	2	\$2.95	
353-6	Square	1.80mm	5.0mm		n/a	n/a		2	\$2.95	
393-6	Taper	5/16-6.0mm			n/a	n/a	Brass	2	\$4.95	6/6/2604

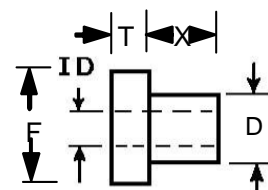


Note: NWSL #354-6, #355-6 and #362-6 are purposely 'loose' fit bearings intended as axle/sideframe journal bearings to permit equalization and springing of trucks without binding at the bearings. This is mechanically reasonable because of the relatively slow operating (axle rotation) speed. For square flanged HO driver axle bearings, contact E H Milligan 305-665-6326.

Prices subject to change without notice.

PLASTIC WHEELSET INSULATORS

These wheelset insulators may be just what you need to replace that missing drawbar insulating flanged bushing on that brass locomotive, or truck mount adapter, or whatever. Keep a selection in your "I'm sure to need these parts someday" box. Who knows, having them there may assure that you never need them but think of the time you'll save hunting for one if you don't keep them on hand!



Part #	Axle fit	Body			Flange		Fits	Fits	Where Used	Price
		Bore (ID)	Diam. (D)	Length (X)	Thick (T)	Diam. (F)	Tread	Wheel		
800-9	1.0mm		.090"	.064"	.021"	.125"	72/64/50			\$2.95
801-9	1.5mm	.058"	.094"	.072"	.018"	.125"	72/64/50	3/32"	74xx-4, 374xx-4	\$2.95
802-9	2.0mm	.079"	.119"	.060"	.023"	.154"	64	.120"	376xx-4	\$2.95
803-9	2.0mm	.079"	.119"	.086"	.023"	.154"	88	.120"	372xx-4	\$2.95
804-9	2.0mm	.079"	.119"	.116"	.023"	.154"	110	.120"	371xx-4	\$2.95
806-9	3/32"	.093"	.121"	.080"	.033"	.187"	88	.120"	72xx-4, 73xx-4	\$2.95
807-9	3/32"	.093"	.121"	.106"	.033"	.187"	110	.120"	71xx-4, 77xx-4, 78xx-4	\$2.95
808-9	1/8"	.100"	.125"	.115"	.047"	.153"	115	1/8"	83xx-4, P:48	\$2.95
809-9	1/8"	.100"	.125"	.140"	.047"	.153"	135/145	1/8"	81xx-4, 82xx-4	\$2.95
811-9	1/8"	.100"	.125"	.154"	.047"	.153"	172	1/8"	88xx-4, 87xx-4	\$2.95
813-9	5/32"	.100"	.157"	.138"	.022"	.198"	145	5/32"		\$2.95
815-9	3/16"	.185"	.313"	.175"	n/a	n/a	172	5/16"	486xx-4, 786xx-4	\$2.95
816-9	3/16"	.185"	.313"	.236"	n/a	n/a	236	5/16"	286xx-4, 686xx-4	\$3.29
817-9	3/16"	.185"	.313"	.270"	n/a	n/a	270	5/16"	86xx-4, 586xx-4	\$3.29
818-9	2.4mm	.093"	.188"	.175"	.066"	.308"	175	3/16"	8206-4, 8305-4	\$2.95

BUSHINGS (REDUCER, SHAFT ADAPTER)

A bushing is used to adapt one size shaft (or axle) to a larger size hole (or shaft) for coupling purposes or otherwise. Some modelers refer to them as 'reducers'. A bushing can also be used as mechanical shaft connectors HOWEVER this requires perfect alignment of the connected shafts for satisfactory operation, such alignment can rarely be successfully accomplished or maintained. Bushings can sometimes be used as bearings, but must be reamed to proper final bore - this is an emergency solution at best. Because the use of bushings can result in tolerance buildup and eccentricity in a mechanism, NWSL has worked to alleviate their necessity by developing a line of universal couplings which can fit (and couple) virtually any shaft size found in small scale models - see the #480-6 series Universal Couplings. The tolerance buildup and thus eccentricity can be particularly troublesome if bushings are used to mount flywheels (which require concentricity as close to perfect as possible for satisfactory smooth operation). Therefore, NWSL discourages use of bushings but makes this limited selection available to help save those 'impossible' model building situations.

ID	OD	Length	Material	Qty	Part #	Price
1.0mm	1.5mm	3.0mm	steel	2	10170-9	\$5.95
1.0mm	2.0mm	3.0mm	brass	2	10171-9	\$5.95
1.0mm	2.4mm	3.0mm	steel	2	10165-9	\$5.95
1.2mm	1.5mm*	2.5mm	steel	2	10160-9	\$5.95
1.2mm	2.0mm	1.6mm	brass	2	10158-9	\$5.95
1.2mm	2.4mm	1.6mm	brass	2	10157-9	\$5.95
1.5mm	2.0mm	3.0mm	brass	2	10161-9	\$5.95
1.5mm	2.4mm	3.0mm	steel	2	10164-9	\$5.95
2.0mm	1/8"	4.75mm	brass	2	10166-9	\$5.95
2.0mm	2.4mm	3.0mm	brass	2	10159-9	\$5.95
2.0mm	2.4mm	3.0mm	steel	2	10169-9	\$5.95
2.4mm	1/8"	5.75mm	steel	2	10162-9	\$5.95
*Adapter style, not bushing						

Prices subject to change without notice.

DRIVER JOURNAL SPRINGS

Most brass HO locomotives are built with miniature coil springs at the driver journals whose purpose is improve driver contact with uneven rail. Unfortunately, most of the springs used have been excessively strong thus making them unable to perform their designed function. Our “medium” approximates the most commonly found; “Light” is comparable to the lightest found on Japanese models (the NWSL #45 2-8-2 and a few others) and is suitable for most HO locomotives unless heavily ballasted; “Wimpy” is very light capacity for very soft springing.

Size	Wire	OD	ID	Length	Pkg/8		Pkg/100	
Wimpy	.007"	2.0mm	1.5mm	4.0mm	1400-4	\$2.95	1410-4	\$12.95
Light	.008"	2.0mm	1.5mm	4.0mm	1401-4	\$2.95	1411-4	\$12.95
Medium	.009"	2.0mm	1.5mm	4.0mm	1402-4	\$2.95	1412-4	\$12.95
Large	.052"	3.0mm	2.2mm	7.0mm	1405-4	\$2.95	1415-4	\$14.95

SHAFT/AXLE STOCK (2pcs, 6 in.)

Part #	O.D.	Price
2015-4	1.5mm	\$12.95
2020-4	2.0mm	\$11.95
2024-4	2.4mm	\$4.95
2025-4	2.5mm	\$4.95
2030-4	3.0mm	\$5.49
2040-4	4.0mm	\$5.49
2050-4	5.0mm	\$5.49
2058-4	5.8mm	\$5.49
2060-4	6.0mm	\$5.95
2062-4	1/16"	\$5.95
2093-4	3/32"	\$5.95
2125-4	1/8"	\$5.95
2156-4	5/32"	\$5.95
2187-4	3/16"	\$9.95
2250-4	1/4"	\$5.95

LUBRICANTS

NG Jel Gear Lubricant	1111-9	\$5.99
Motor Bearing Lubricant	2112-9	\$7.99
Heavy Duty Bearing Lubricant	2752-9	\$7.99
Conducta Lube & Cleaner	3753-9	\$7.99
Combo Pak, (1111-9, 2112-9, 3753-9)	4004-9	\$18.95

Wheel Wiper Pickups, bronze

Size	Pkg/1	Pkg/10
.005" x 1.75"	#121-4 \$1.50	#1121-4 \$9.95
.007" x .800"	#129-4 \$1.50	#1129-4 \$9.95

Solder Tab, bronze

Pkg/5	Pkg/50
#120-4 \$1.29	#1120-4 \$7.50

MOTOR-POWER TRUCK WIRE

For fine miniature operating models— with flexibility that allows free movement. PVC insulation, single conductor. Especially valuable for small model motor hookup (under 1 amp).

28 gauge, 7 strand

Color	2ft \$1.59	25ft \$7.95
Brown	10013-9	99013-9
Tan	10014-9	99014-9

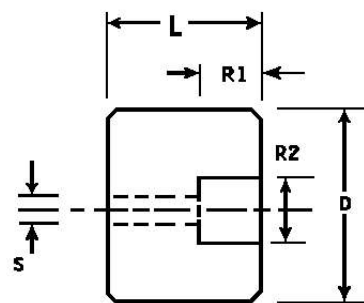
30 gauge, 28 strand

Color	2ft \$1.95	25ft \$19.95
Red	10008-9	99008-9
Black	10010-9	99010-9
Orange	10011-9	99011-9
Light Gray	10012-9	99012-9

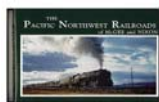
FLYWHEELS

Flywheels provide a momentum or smoothing action to your prime mover (motor) output to provide you with smooth and more reliable operation of your models. The momentum action provides more realistic starts and stops and helps overcome pesky intermittent electrical contact problems. The NWSL Standard Flywheel design has a deep recess to accept universal couplings thereby keeping overall length of the power unit to a minimum. The NWSL Bell Flywheel has been discontinued. Precision machined brass, not cast. Light press fit (to precision shaft of dimension shown) unless indicated otherwise.

Diam	Length	Shaft	R1	R2	Pt #	Price
10mm/.390"	7mm/.276"	1.0mm	3mm	6.3mm	435-6	\$5.95
10mm/.390"	7mm/.276"	1.5mm	3mm	6.3mm	400-6	\$5.95
10mm/.390"	7mm/.276"	1.2mm	3mm	6.3mm	420-6	\$5.95
11mm/.433"	7mm/.276"	1.5mm	3mm	6.3mm	408-6	\$5.95
11mm/.433"	7mm/.276"	2.0mm	5mm	8mm	409-6	\$5.95
12mm/.472"	7mm/.276"	1.5mm	3mm	6.3mm	401-6	\$5.95
12mm/.472"	7mm/.276"	1.2mm	3mm	6.3mm	421-6	\$5.95
12mm/.472"	9mm/.354"	1.5mm	3mm	6.3mm	424-6	\$5.95
12mm/.472"	11mm/.433"	1.5mm	3mm	6.3mm	425-6	\$5.95
16mm/.630"	9mm/.354"	2.0mm	4mm	8mm	402-6	\$7.95
16mm/.630"	9mm/.354"	2.0mm slip	4-5/32"	6.3mm/.250"	432-6	\$7.95
16mm/.630"	9mm/.354"	1.5mm	4mm	6.3mm	422-6	\$7.95
16mm/.630"	11mm/.433"	2.0mm	4mm	6.3mm	407-6	\$7.95
16mm/.630"	11mm/.433"	1.5mm	4mm	6.3mm	423-6	\$7.95
17mm/.669"	11mm/.433"	2.0mm	5mm	8mm	405-6	\$7.95
18mm/.708"	11mm/.433"	2.0mm	5mm	8mm	406-6	\$7.95
18mm/.709"	11mm/.433"	2.4mm	5mm	8mm	403-6	\$7.95
25mm/.984"	11mm/.433"	2.4mm	5mm	8mm	404-6	\$9.95
25mm/.984"	13mm/.51"	1/8"	7mm/.276"	9.5mm/3/8"	411-6	\$9.95
28mm/1.1"	13mm/.51"	5/32"	7mm/.276"	9.5mm/3/8"	415-6	\$9.95
28mm/1.1"	13mm/.51"	3.0mm			433-6	\$9.95
31mm/1.25"	16mm/.630"	5/32"	7mm/.276"	9.5mm/3/8"	417-6	\$9.95
31mm/1.25"	16mm/.630"	3.0mm			434-6	\$9.95
38mm/1.5"	13mm/.51"	1/8"	7mm/.276"	9.5mm/3/8"	412-6	\$9.95
38mm/1.5"	13mm/.51"	5/32"	7mm/.276"	9.5mm/3/8"	416-6	\$9.95



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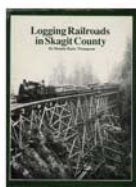


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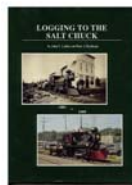


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